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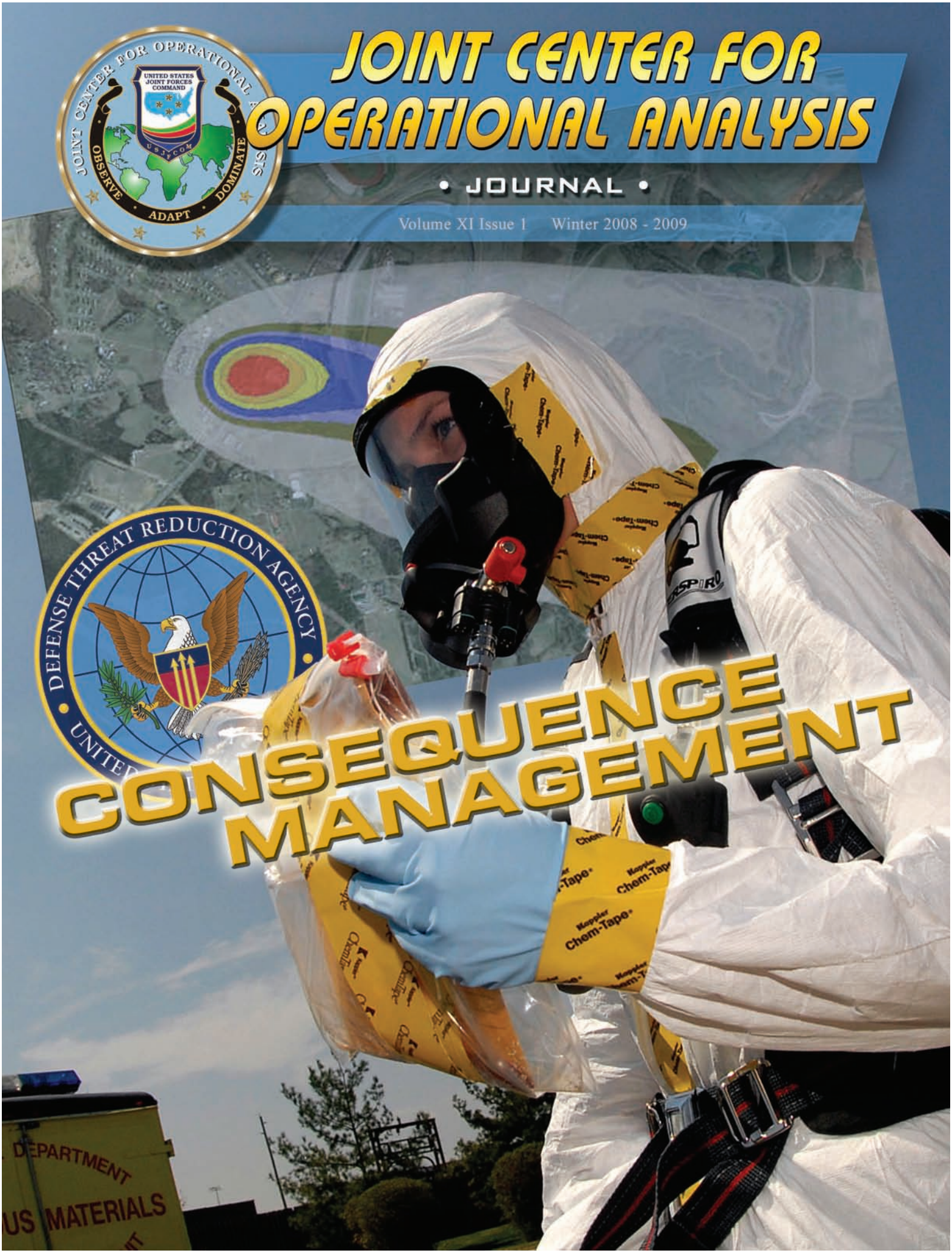

CONSEQUENCE MANAGEMENT

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JCOA Journal Survey

The Joint Center for Operational Analysis (JCOA) is currently running a survey to determine the relevance and impact of the Journal to our readers. The survey questions involve the timeliness of subject areas and their relevance to those who receive the Journal. The Journal Survey is available at the external link below. At the external site, you can also access all previous editions of the JCOA Journal in a pdf format that is available for downloading.

Journal Survey link: ***http://jecs.jfcom.mil/jcoa/***

Message From the Director

BG Anthony G. Crutchfield, USA
Director, JCOA

According to the Department of Defense Dictionary, consequence management (CM) involves those "actions taken to maintain or restore essential services and manage and mitigate problems resulting from disasters and catastrophes, including natural, man-made, or terrorist incidents." In this issue of the JCOA Journal, we have partnered with the Defense Threat Reduction Agency (DTRA) to present key lessons and recommendations for CM from their experience in both exercises and real world incidents.

The articles in this Journal present best practices in CM and discuss issues such as the legal and practical aspects of dealing with the contaminated dead, the role of CM management teams, and crisis communications. Also included are articles which discuss the best means for responding to incidents involving chemical, biological, radiological, nuclear, and high explosive (CBRNE) events, with articles analyzing the results of incidents in the United States and around the world. Specific examples are the sarin attack in the Japanese subway in 1995 and the miscommunications that compounded and stymied the effective response; the radiological accident in Brazil in 1985 and the devastation caused by inadvertently failing to control a unit containing Cesium-137; and, the intentional anthrax attack within the United States in 2001 and the subsequent effects from that incident.

I believe this Journal will be an important reference manual for those agencies who need to refine their plans for dealing with these types of events. I would like to thank MG Manner, Acting Director of DTRA, and his staff for providing these fine articles. Their lessons will pay big dividends in the future if, or when, the unthinkable happens in America.

The final article is from the Joint Task Force - Civil Support (JTF-CS) on how they respond to incidents to provide command and control during a CBRNE CM crisis situation. They are the only standing joint task force responsible for CBRNE CM operations. The article looks at their capabilities, tasks, and responsibilities and presents the various phases of operations involved in their response.

Again, I want to thank all those who have worked so hard to present a tutorial compilation on this highly important and critical piece of future planning. Hopefully, readers will be able to digest and incorporate these lessons into their daily planning efforts.

Anthony G. Crutchfield
Brigadier General, U.S. Army
Director, Joint Center for Operational Analysis

JCOA UPDATE

Based on the success of the last two major studies requested by GEN Petraeus – ***Counterinsurgency, Targeting, and Intelligence Surveillance and Reconnaissance (CTI)***, and ***Joint Tactical Environment (JTE)*** – we have been tasked to produce a third study called ***Comprehensive Approach: Iraq Case Study (CAI)***. This study was also requested by GEN Petraeus, but handed off to his successor GEN Odierno and AMB Crocker. The Department of Defense (DOD) and Department of State (DOS) combined study captures the innovations, best practices, successes, and challenges of the 2007 and 2008 comprehensive counterinsurgency and stability efforts in Iraq, with emphasis on civil-military cooperation from the tactical to the strategic levels. Collection is complete, analysis is on-going, and the final brief is scheduled to be given to GEN Odierno the beginning of March.

As we finish with the CAI study, we will be hosting a lessons learned conference from 17-20 March 2009. It will be for Interagency, Joint, Service, and Multinational participants focused on substance and information sharing (not process) along the lines of the conferences hosted by JCOA in 2003 and 2004. The purpose is to systematically brief, discuss, and capture lessons from current complex, joint, and combined operations around the world. The overall goal of this conference is to produce a product which can affect decision makers and can be used by all participants in support of their organization's respective warfighting improvement programs. In addition to the presentations, four working groups will be formed based on the major themes of the conference: ***Joint Adaptation to Irregular Warfare (JAIW)*** - lessons associated with the struggle among state and non-state actors for legitimacy and influence over the relevant populations. Irregular warfare favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities, in order to erode an adversary's power, influence, and will; ***Joint Warfighting (JWFX)*** - lessons related to the capabilities and activities which help joint force commanders synchronize, integrate, and direct joint operations. Functions that are common to joint operations at all levels of war fall into six basic groups — command and control, intelligence, fires, movement and maneuver, protection, and sustainment; ***Homeland Defense (HLD)*** - lessons related to the protection of a nation's sovereignty, territory, domestic population, and critical infrastructure against external threats, aggression, and disasters. A concerted national effort to prevent incidents including terrorism, major disasters, and other emergencies, and to minimize the damage and expedite recovery from these events; ***Security Cooperation (TSC)*** - lessons from complex shaping activities that involve other nations and are intended to influence the environment in peacetime. Activities include programs with other nations to improve mutual understanding and interoperability. They are designed to support a national diplomatic strategy. This will be a general officer/flag officer level discussion which we hope will be of value long after the conference is over.

This is only a small sampling of studies and activities that are on-going within JCOA. We are in the process of shifting our focus from Iraq to Afghanistan and are busy making plans for how to best balance our efforts. There is never a shortage of joint operations and/or issues that can be analyzed and disseminated to improve and impact the way we conduct operations in the future.

"Progress, far from consisting of change, depends on retentiveness... Those who cannot remember the past are condemned to repeat it." George Santayana, 'Life of Reason'

Mr. Bruce Beville
Deputy Director JCOA

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JCOA Journal Staff:

BG Anthony G. Crutchfield, US Army, *Director JCOA*	757-203-7317	anthony.crutchfield@jfcom.mil
Mr. Alan D. Preisser, *Editor and Layout Designer*	757-203-7497	alan.preisser@jfcom.mil
JWFC Graphics, *Cover Design*		

Defense Threat Reduction Agency Introduction

Established on 1 October 1998, the Defense Threat Reduction Agency (DTRA) commemorated its 10th anniversary this past year with the theme "Celebrating 10 years of Creative Solutions through Teamwork." DTRA's affinity for teamwork is showcased through the tremendously valuable relationship between DTRA and the US Joint Forces Command Joint Center for Operational Analysis (JCOA). Through this relationship we have endeavored to place valuable information in the hands of the joint warfighter. The result is this issue of the JCOA Journal which highlights consequence management (CM) best practices distilled from DTRA's participation in combatant command exercises and its analysis of real world events.

The mission of the Defense Threat Reduction Agency is to safeguard America and its allies from weapons of mass destruction (chemical, biological, radiological, nuclear, and high explosives (CBRNE)) by providing capabilities to reduce, eliminate, and counter the threat, and mitigate its effects. DTRA is the intellectual, technical, and operational leader for the Department of Defense (DOD) and the US Strategic Command in the national effort to combat the weapons of mass destruction (WMD) threat. Through its three mission support enterprises—Combating Weapons of Mass Destruction, Operations, and Research and Development—DTRA performs four essential functions to accomplish its mission: combat support, technology development, threat control, and threat reduction.

As the Acting Director for the Agency, I am pleased to have this opportunity to highlight one facet of our combating WMD capabilities--that of consequence management. The Consequence Management Division, within the Combat Support Directorate of the Operations Enterprise, enhances the capability of US, allied, and coalition forces to prepare for, respond to, and recover from WMD events and accidents. It provides deployable consequence management expertise for DOD and other federal agencies during all phases of such incidents. The division coordinates and executes domestic and foreign CM exercises to train combatant commands and joint task forces in responding to real-life events. Real world and exercise lessons learned are leveraged to assist in building the consequence management annexes of combatant commanders' plans.

I believe you will find the topical areas discussed in this issue of the JCOA Journal to be informative and valuable as reference material. Our objective in collaborating with JCOA to publish this issue is to provide CM-centric information, in the form of best practices and associated information, to an expansive joint audience not typically versed in consequence management. After detailing a few CM best practices, providing a historical perspective on CM operations, and detailing how the DOD supports other federal agencies, the articles within the journal take you from the beginning of a CM response (legal considerations and crisis communications) through dose assessment, remediation, and restoration operations (dosimetry, decontamination, and contaminated remains) before concluding by providing insight to the CM-centric support DTRA provides to the warfighter through the deployable advice and planning assistance offered by a CM advisory team.

A major CBRNE event will affect people at all levels, both civilian and military. The effectiveness these people have in dealing with the consequences of such an event is directly proportional to their preparation. I envision this issue being used as a ready reference tool for action officers, planners, and decision makers as they navigate their way through the myriad steps in the planning and training processes for responding to a consequence management event. As an Agency we stand ready to assist you; as the Acting Director I welcome your comments and questions.

Randy Manner, Major General, USA
Acting Director
Defense Threat Reduction Agency

Best Practices for Consequence Management

Catharine Leahy
Fred Hudson

Best Practices for Consequence Management (CM) presents the joint reader some of the positive lessons learned over the past three years of Defense Threat Reduction Agency (DTRA) supported Department of Defense (DOD) Consequence Management exercises. The selected best practices focus on measures not discussed in other articles contained in the journal and highlight command, control, and synchronization points that might be helpful to the joint command when responding to a chemical, biological, radiological, and nuclear (CBRN) event. This article's primary objective is to trigger thoughts and cross-discussion between joint warfighters in advancing the effectiveness and efficiency associated with CM response.

Introduction

The threat lurks in the cold, darkened shadows on the fringes of an open society sniffing out the seams along a defensive plan where the slightest gap might provide an avenue to exploit. Complacency offers safe refuge to the threat so that the mere mentions of CBRN attacks generate fear and terror. The most effective deterrent to counter this threat and one that best serves the nation's interests is a proactive, well thought out and frequently exercised consequence management strategy that promotes strength and confidence up-front.

> ***"We shall have the ability to respond rapidly and decisively to terrorism directed against us wherever it occurs, to protect Americans, arrest or defeat the perpetrators, respond with all appropriate instruments against the sponsoring organizations and governments and provide recovery relief to victims, as permitted by law."*** -Presidential Decision Directive (PDD) 39

In June 1995, following the devastating attacks in Tokyo and Oklahoma City, President Clinton signed Presidential Directive 39 (PDD-39) (superseded by NSPD 17) outlining the US Policy on Counterterrorism. The directive clearly articulated a policy to deter, defeat, and respond vigorously to all terrorist attacks on US territory, citizens, and facilities, whether at home or abroad. Furthermore, PDD-39 historically codified the term *consequence management* or CM, making it a central part in the defense against terrorism. The importance of effective CM became unmistakably clear following the attacks of 11 September 2001 (9/11) when all levels of government responded to minimize damage, loss of life, and provide emergency assistance to restore essential services.

A national commission was convened to review the events of 9/11 and it concluded that the nation was not prepared. One significant lesson following that tragic day was the failure of our government to administer a more effective response in managing consequences stemming from the attack.

> ***"As part of our defense, the United States must be fully prepared to respond to the consequences of WMD use on our soil, whether by hostile states or by terrorists. We must also be prepared to respond to the effects of WMD use against our forces deployed abroad, and to assist friends and allies."*** - President George W. Bush, December 2002, National Strategy to Combat WMD [weapons of mass destruction]

Clearly, the lessons of consequence management must not only be learned but constantly updated in light of an evolving threat if we are going to meet the nation's counterterrorist strategy.

Background

The Consequence Management Exercise Support (CSME) branch of the Defense Threat Reduction Agency (DTRA) supports US Combatant Command efforts to improve readiness, response, and effectiveness in managing consequences of a CBRN event. The DTRA CSME supports and sponsors numerous joint domestic and foreign CM exercises and seminars oriented on training commands, staffs, and first response elements.

DTRA exercise planning follows the Joint Training System and builds event execution along the phase-based planning sequence of the Joint Exercise Life Cycle (JELC). During the event execution phase of the JELC, experienced observers collect observations and analyze trends. The observations and trends, combined with participant comments captured during "hot-washes" immediately following an event form the basis of detailed and thorough reports provided to the command 30 days after event conclusion.

This article will present the joint reader with some of those best practices (BP) exhibited during the past three years of DTRA supported DOD Consequence Management exercises. The reader should note that the BPs are not weighted with any priority – other articles in the Journal will highlight additional best practices across crisis communications, decontamination, legal affairs, and interagency coordination. It is recognized that each joint command, like their operating environments, is unique and has different requirements; therefore, the BPs discussed might not fit every command. Finally, the reader should be aware that the intent is not to provide a "shopping list" of BPs, rather the article's primary objective is to hopefully trigger thoughts and cross-discussion between joint warfighters to advance the effectiveness and efficiency associated with a CM strategy.

> ***The only real mistake is the one from which we learn nothing.*** - John Powell

BEST PRACTICE – Consequence Management Exercises and Training

In most CM operations, DOD acts as a supporting agency. Combatant command staffs should clearly understand, train, and prepare for this role. Academic events, such as Table Top Exercises (TTX) and Senior Leader Seminars (SLS), provide excellent forums for staffs to discuss roles, responsibilities, plans, annexes, and policy. When possible, full command and staff participation is essential for meeting event objectives; additionally, Host Nation (if applicable) and United States Government (USG) interagency participation in exercise planning conferences and execution should always be sought out and encouraged.

Academic events may include background information from subject matter experts (SME) and decision-makers on the most recent revisions of key policies and procedures related to response planning. Facilitated discussions provide an environment for key leaders from host nation governments (if applicable), US federal, state, and local agencies, and combatant command staffs to discuss and establish protocols for responding to CBRN incidents. Train-up academic events should be included in exercise development plans in preparation for exercise execution as an essential and expedient way for leaders and staffs to establish relationships and exchange information.

Academic events complement the more robust, but equally important, command post and field training exercises. They offer commands a fiscally and operationally efficient manner to maintain CM readiness and meet annual training requirements by alternating "light" and "heavy" event execution from year to year.

BEST PRACTICE – Learning Lessons

The completion of a CBRN exercise event is often accompanied by a collective sigh of relief by the subject staff, while in reality the real work is just beginning. Lessons learned determine the best practices for managing consequences of a terrorist attack at home or abroad. As mentioned earlier, following a given CBRN exercise event, DTRA provides the host command with a detailed report compiling collected observations and trends. Data from the report will sometimes be referred to as "lessons learned," however this makes a huge and potentially dangerous assumption that the collected observations and trends have been incorporated and, in fact, already learned by the exercised staff. Following event execution a concerted effort should be made by staff authorities to determine which observations and trends should truly be "learned," and promulgate a program of actions and milestones to ensure staff compliance and understanding.

Sustaining lessons and best practices within a library or database, and reviewing them before the next CBRN exercise event, is the most effective way to help measure program consistency and progress while generating worthwhile improvements. Additionally, the collected observations, trends, and lessons learned will

mitigate the knowledge gaps that invariably result from command and staff turnover.

BEST PRACTICES – Information Management

Following a CBRN attack the operations center will most likely be deluged by a potentially overwhelming cascade of information. During the Tokyo subway attack, one government office was so inundated with information that it erroneously claimed to be in the midst of the worst crisis since the Second World War. Therefore, it is absolutely essential for staffs to have a clear understanding of the commander's guidance and intent (often developed during exercised CM responses) in order to best prioritize and categorize incoming data. The processed information should then be focused toward building better situational awareness for the commander to allow him/her to make timely decisions.

The daily forum to present collected information is often some version of a "commander's update brief."These briefs, while important for orienting commands and synchronizing a common understanding often become historical reviews of the past 12-24 hours. Commands should consider reorienting such briefs to focus on presenting data in a format that provides a clear-cut decision making opportunity for the commander when necessary.

Another challenge facing commands in responding to a CBRN event will be the fact that participants outside DOD lack access to secure military networks. With this in mind, some commands have developed official unclassified (but often password protected) networks that could be used to facilitate a common shared information picture in support of disaster relief, humanitarian assistance, or CBRN consequence management.

The response to a CBRN event will draw from across government (both foreign and domestic), military (again, both foreign and domestic), state, and local authorities and often even the private sector. In view of these potential participants, commands should work to manage information by utilizing flexible, well-thought out, and previously exercised methods–from formal and informal chains, to secure and unsecure networks, and the use of multiple languages to ensure success. Commands must work to maintain common situational awareness throughout all phases of consequence management.

Commands should recognize that information management (IM) is paramount for an effective CM response to a CBRN event. Utilization of widely accessible but official portals and web-based collaboration tools significantly increase the speed and effectiveness of any response. However, training and subsequent exercises are always recommended to validate the use and capability of effective collaboration IM tools.

BEST PRACTICES – CBRN Subject Matter Expertise

A major challenge facing commands today is the lack of resident CBRN subject matter expertise on the staff to lend insight into CM response efforts, participate in pertinent operational planning team meetings, and review and update related orders and plans. CBRN advisory teams, such as DTRA Consequence Management Advisory Team (CMAT), may deploy to augment commands with CM expertise, support, advice, and hazard prediction modeling assistance; however, most advisory team assistance is temporary and non-resident to commands. In response, some commands have worked to create CBRN databases identifying units, capabilities, specific equipment, response times, and command structures within the corresponding area of responsibility. Other databases could be created to provide agent effects and proven methodologies for response to relieve associated casualty pain and suffering. These readily accessible tools, paired with the presence of a full-time CBRN officer, would greatly enhance staff awareness and response time.

Commands have also considered bridging gaps in CBRN staff expertise by contracting services from capable civilian personnel or assigning designated staff officers with additional duties, and then arranging for the necessary requisite training and tools.

Finally, commands might consider a more broad and imaginative use of reachback to virtually pull subject matter expertise into various processes, boards, and planning teams.

BEST PRACTICES – Utilization of Liaison Officers

Military and interagency liaison officers (LNO) contribute significantly in helping coordinate effective CBRN consequence management response operations across an often complicated joint operating environment. Well-trained officers, skilled in the art and requirements of liaison duty, can be force multipliers for both receiving and providing commands, lending invaluable assistance with information sharing, staff planning, and efficient response execution. Commands effectively utilizing liaison officers generally assign quality officers to the role and then work to integrate the liaison officer into the commands staff operation, to include appropriate planning meetings and daily reoccurring events.

BEST PRACTICES – Interagency Coordination

The decision to involve supporting agencies in any exercise should be carefully assessed by event planners. Once participation is approved, applicable plans, policies, and procedures should be provided and discussed to reflect realistic interagency response to an incident. Interagency participation, when clearly defined, enhances CM training. Whenever possible, subject matter experts on national policy, response plans, and doctrine should also be included in exercise planning, supporting academics, and event execution.

Response to CBRN events will always draw interagency participation. Command response to foreign and domestic consequence management events will depend on effective use of staff interagency coordination/engagement groups, LNOs reflecting host nation (HN) and USG relationships, as well as state, and local authorities. Those relationships should be exercised on a defined periodic (not to exceed annual) basis with participants exchanging updates of support available and requirements needed as part of an integrated consequence management plan. In the end, familiarity between participants will generally prompt a more expeditious and effective response and result in the required unity of effort necessary for mission success.

BEST PRACTICES – Command, Control, and Synchronization

Commanders and supporting staffs familiar and adept in using military decision making methodologies have a distinct advantage in consequence management. Staffs that are mentally synchronized with the commander's guidance and intent are significantly more effective in not only collecting intelligence and information necessary to facilitate early and effective decisions, but also in developing plans in response to "what-if" events. The expansion in staff focus beyond current...and into future operations results in a more nimble CM response that is better able to flex to a rapidly changing environment. The challenge in making this leap is that the decision making process and necessary staff integration must be second nature – which can only be brought about through a well thought out training and exercise program reflecting an overarching "train as you fight" philosophy.

Consequence management is not unlike other military operations having multiple phases involving preparation, response, deployment, operations, transition, and redeployment. As with these military operations, familiarity with requirements across staff functions is essential for effective and efficient command action. Therefore, staffs must be knowledgeable in all aspects of pertinent CM standard operating procedures (SOP), concept plans (CONPLANS), or functional plans (FUNCPLANS).

During CM exercises, commands should work to generate environments that stress the command and assigned components while seeking to define command relationships and related lines of communication, and then identify those gaps in command and control. An elevated operations tempo will enable commands to better deal with a battle rhythm crowded by events corresponding with the scope of the crisis response.

Well established and comprehensive checklists provide an excellent way for commands to outline individual response procedures. For domestic events, guidelines compliant with the National Incident Management System (NIMS) will also yield a better understanding of DOD roles and responsibilities.

Following a domestic or foreign CBRN incident, the joint command will support the designated lead federal agency (LFA) in restoring order and relieving associated pain and suffering. To that end, staffs should have previously prepared the tools required to accurately measure the effectiveness of the command's response. This is an essential requirement to support the commander's guidance and intent, and enable the eventual transition of support to follow-on authorities.

Conclusion

As a Combat Support Agency, DTRA is federally mandated to assist COCOMs through all phases of exercise planning and execution. DTRA has supported and sponsored CM events in all combatant command areas of operation. As directed in CJCSI 3214.01C, DTRA integrates Joint Chiefs of Staff-level and combatant command-level foreign consequence management (FCM) exercises, supports Office of the Secretary of Defense and interagency FCM planning and exercise activities, and provides training to DOD components and other USG agencies as requested. DTRA also provides operational and technical advice/support to DOD components and other USG agencies on FCM operations through training and exercise, deployment of consequence management CBRN teams, operational planning assistance, and FCM program management.

The events of 11 September 2001 validated a need to train at the federal, state, and local levels for future attacks; furthermore, the DOD, as a part of a multiagency response, should prepare to support any and all requests for assistance. Command preparation is a direct function of proper exercise and training.

The best practices included in this article resulted from observations and trends gathered during exercises. Exercise and training remain the first step to promoting the necessary strength and confidence required to help mitigate the threat from a CBRN attack. However, the all important second step is in truly learning and integrating the noted lessons.

About the Authors

Catharine Leahy is currently employed by Cubic Applications Inc. as a member of the CBRNE Exercise Support Team to the Defense Threat Reduction Agency (DTRA) and is the lead analyst for exercises in the Pacific Command area of operations.

Colonel (Retired) Fred S. Hudson, Jr., USMC is a consultant and military analyst for concept development, transformation, exercise, and experimentation initiatives. His career with the Marine Corps included tours throughout the Mediterranean, Lebanon; the Persian Gulf (Operations ERNEST WILL and DESERT STORM); the Balkans (JTF SHINING HOPE and JTF SKILLED ANVIL); and Iraq (MNC-Iraq), as well as service with the Aviation Combat Element for URBAN WARRIOR and Special Operations Command Central (SOCCENT) during Operation ENDURING FREEDOM. His last assignment was Executive Assistant to the Secretary of the Navy Gordon England.

Exercise: NATO CM Exercise IDASSA 07. Date:5/1/2007

A chemical agent response team checks the status of their equipment following a simulated chemical spill at the Gazenica port facility in Croatia.

The Subway Sarin Gas Attack - A Historical Perspective

Mirentxu Arrivillaga
Patrick Delaney

A historical perspective on the 1995 sarin gas attacks on the Tokyo Subway system and subsequent Japanese emergency response efforts. This analysis will further highlight current best practices as they relate to this event, as well as other events in the consequence management realm.

Preface

During Tokyo's crowded morning rush hour on 20 March 1995, several plastic bags, masked with newspapers, were placed under seats on five different subway cars moving over three different Metro lines, by members of Aum Shinrikyo, an apocalyptic religious cult (Figure 1). Prior to exiting the trains and vacating the scene, the five perpetrators pierced the packages with sharp umbrellas, triggering the spill of a liquid that vaporized into a toxic gas (Stone, 6). Before long, the poisonous gas began affecting commuters, eventually leaving 12 dead, hundreds injured, and thousands terrified (Olson 513-514). The incident was a deadly blow to the city and challenged the Japanese government's immediate emergency response capability. The response to the attacks on the Tokyo subway system affords the joint reader a look at valuable lessons that apply to the development of consequence management best practices. The purpose of this article is to highlight open source issues associated with the Japanese response in an effort to advance development of better joint United States (US) response plans and consequence management policies.

Background

Shoko Asahara founded Aum Shinrikyo in 1984 based on his personal interpretations derived from Buddhism, Christianity, and varied writings of the apocalypse (Smithson, 3). Asahara claimed that the end of the world was near and only Aum followers would survive. By 1995 the cult had 9,000 members in Japan and over 40,000 worldwide. The cult attracted the attention of Japanese law enforcement following the discovery of evidence possibly linking Aum Shinrikyo with the June 1994 release of sarin gas in the city of Matsumoto (which killed 8 people) and later the grisly murder of a cult member's relative. The police were in the midst of planning a coordinated raid on various Aum Shinrikyo sites before the subway attacks occurred.

By 0800 on 20 March, the five cult followers selected for the terrorist mission had released the poisonous gas and promptly exited the trains. The subway trains continued downtown passing numerous stops before converging at the Kasumigaseki station, one of the busiest metro stops, and more significantly the principal station providing immediate access to the Tokyo police headquarters and other government buildings. As on any typical Monday morning, local police were reporting for a 0830 shift change, guaranteeing a large number of federal officials passing through Kasumigaseki station (Panji, 424 – footnote 31).

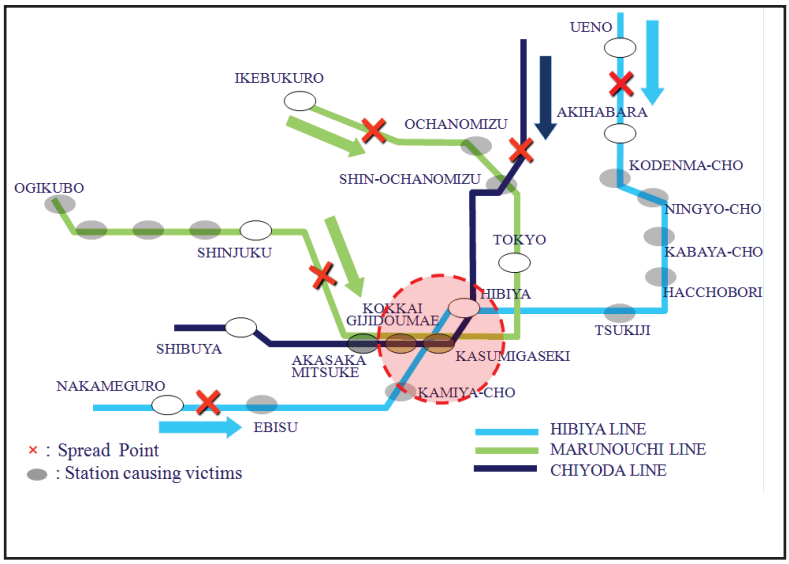


Figure 1 – The spread of sarin among the Hibiya, Marunouchi, and Chyoda Tokyo Subway Lines (Nakamura Presentation, Slide 8)

Luckily, the nerve agent used was an impure mixture which was evidenced by the package's odors and substance leaking from them; 100 percent sarin would have been odorless and colorless. This preparation contained only 30 percent sarin and, therefore, its affects were less serious than they could have been (Pangi, 424). Even in its weaker state, the debilitating effects of the attack were quickly apparent as passengers in the trains and platforms along the designated lines showed symptoms of coughing, vomiting, loss of sight, and consciousness.

Figure 2 – Casualties outside a Tokyo Subway Station (Nakamura, Slide 11)

Those responding first to various distress calls included the fire and police departments, emergency medical technicians (EMT), and later doctors and nurses. Those in critical condition were initially evacuated to St. Luke's International Hospital where the facility had already begun receiving physically distressed passengers arriving by their own means (the hospital was located within three kilometers of five of the affected subway stations). Within an hour, St. Luke's staff and bed capacity for treatment were overwhelmed. By the end of the day, Tokyo hospitals and clinics had seen more than 5,500 incident related patients (Pangi, 2).

The Hibiya, Marunouchi, and Chiyoda subway lines, that served over 1.5 million daily commuters, and the 26 adjoining stations were shut down (Smithson, 91). The media arrived at Kasumigaseki station, but it was still hours before news broadcast confirmed that the toxic gas was sarin. However, by then many first responders had already been exposed and were rapidly adding to the growing numbers of casualties. Timely communication to the public about the incident was only one of the many lessons learned for the Japanese government.

Reviewing the Japanese Response

The objective in any consequence management response is to mitigate the effects of the event and enable a rapid recovery. The following section will review the Japanese response utilizing the framework outlined in the US Joint Doctrine for Combating Weapons of Mass Destruction's (JP 3-40). The JP 3-40's CM pillar entails five tasks: Assess, Coordinate Operations, Conduct Logistics, Health Service Support, and Decontaminate. Each task (to include applicable sub-tasks) and associated lesson will contain supporting examples to aid in the identification of common failings and recommendations for improvement.

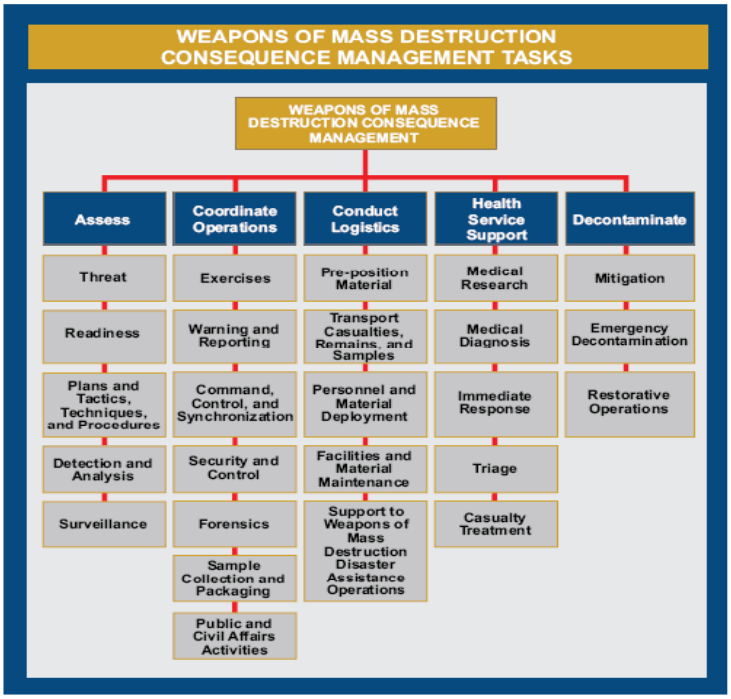


Figure 3 –Weapons of Mass Destruction Consequence Management Tasks (JP 3-40, Figure IV-1)

Assess

Readiness:

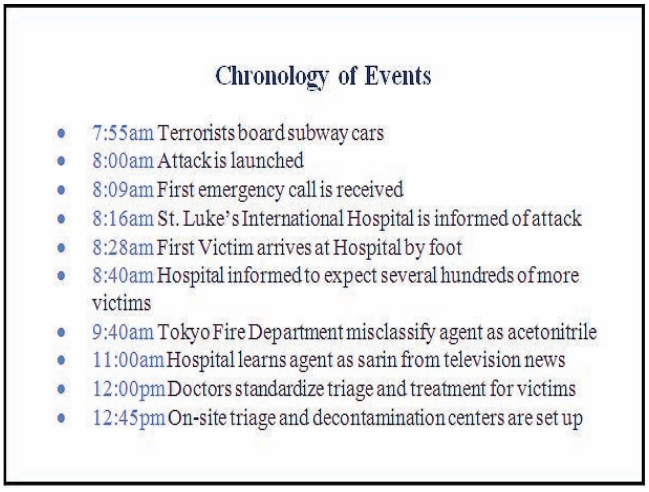
- The government's response was clearly uncoordinated and lacked needed synchronization between various departments and agencies. Since the attack,

the Prime Minister's Office has created the National Security and Crisis Management Office to conduct regularly scheduled exercises involving associated organizations and specialists (Okumura et al, Presentation Abstract).
- The government lacked a specially trained team to respond to domestic chemical incidents and therefore requested Japan Self Defense Force (JSDF) support. Since the sarin attack, the government has established a Severe Chemical Hazard Response Team (Okumura et al, Presentation Abstract).

Plans and Tactics, Techniques, and Procedures:

- A common failing was the lack of clear and executable emergency plans, procedures, and specialized WMD training among first and immediate responders.
- A planning assumption not considered was the significant impact that people reporting sympathetic symptoms had on the medical support community. Planners should assume a 5:1 ratio in determining a "worried well" response (Pilch, 10).
- Additionally, a medical surge capability with access to a worldwide stockpile of available drugs and a centralized reporting system would clearly have helped the response.
- The presence of a distinct and executable coordination plan among government agencies was noteworthy in its absence.

Figure 4 - Chronology of Events (based off Ataxia, Page 93-94)



Coordinate Operations

Warning and Reporting:

- Problems stemmed from a delay in recognition of the nature of the incident, the identity of the agent, and dispersal methods. Although passengers on the three lines began showing symptoms almost immediately, it took an hour and a half to shut the affected subway lines down and evacuate the contaminated trains and stations.
- Without a centralized reporting mechanism in place there was no ability to identify trends. Each incident was treated as an isolated event, although by 0844, the National Police Agency (NPA) recognized the severity and magnitude of the events and requested support from the JSDF chemical units (Pangi, 429).
- Lacking any training or familiarization in the human effects of chemical or biological incidents impaired transit workers from identifying the problem and commonalities between the various casualty centers.
- By the time traffic along the three subway lines was suspended, an hour and a half after the attacks were initiated, the hospitals still had not received official verification on the cause of the incident and the type of nerve agent involved (Smithson, 97).

Command, Control, and Synchronization:

- Communications between departments, agencies, and offices were poorly coordinated, not efficiently disseminated, and haphazardly shared. Responding agencies worked from stovepiped hierarchies with little to no interaction (Pangi, 429).

  – The Tokyo Metropolitan Fire Defense Agency (TMFDA) and Tokyo Metropolitan Police Agency (TMPA) failed to share critical information in a timely manor. TMFDA had the expertise and the analytical equipment to identify the presence of sarin, but it wasn't included in their data base of potential agents. Meanwhile, the TMPA was able to identify the substance within three hours following the attack because of evidence collected from the 1994 Matsumoto sarin incident. Although TMPA identified the agent as sarin, they failed to inform TMFDA or treatment facilities for another hour (Larson, 28).

- The delineation of critical information required to trigger key decisions was not evident from any organization, therefore staffs charged with response efforts blindly flailed, sifting through improperly prioritized data.
- Failure to properly manage information resulted in gross mischaracterizations of the incident by some authorities, which simply heightened panic and fueled anxiety among the population.
- A lack of an incident management system (IMS) had consequences for warning and reporting, and severely impacted the coordination of critical resources and information sharing.

Security and Control:

- Following the attack, Japanese authorities refined the nomenclature of a given incident site demarcation from "contaminated" and "uncontaminated" areas to a more specific "hot zone (contaminated area), a warm zone (area where decontamination may occur), and a cold zone (uncontaminated area)." Thereby promoting a more effective and safer operation (Okumura, et al., 190).

Public and Civil Affairs Activities:

- The long term effects and aftermath of the incident itself are some of the more serious challenges associated with recovering from a chemical, biological, radiological, or nuclear (CBRN) incident. The "worried well" casualties mentioned earlier – those patients experiencing sympathetic symptoms they attribute to the incident – were at a ratio of 4:1 with patients that had actual exposure to the agent (Beaton et al., 108). The "worried well" cases overwhelmed treatment facilities and continued to seek medical attention months after the incident.
- Although neither the initial shock nor the Post Traumatic Stress Disorder (PTSD) symptoms can be eliminated, the generation of accurate and timely medical information can be vital in lessening the impact of "worried well" cases and aid in their distinction at hospitals.

  – St. Luke's hospital treated 641 individuals on the day of the attack, more than any other treatment facility. The hospital conducted a follow-up survey of those individuals one month later. the 408 patients that responded reported the following symptoms (Pangi, 4):
  32 percent feared the subway
  29 percent experienced sleep disturbances
  16 percent had flashbacks of the event
  16 percent suffered depression
  11 percent were jumpy and easily frightened
  10 percent had nightmares and were irritable

Health Service Support

Medical Diagnosis:

- A timely medical diagnosis of the agent was delayed by the lack of a consolidated effort to analyze the symptomatic medical information. Earlier detection could have prompted precautionary measures for first responders (a quick administration of prophylaxis) and a more effective triage of casualties.
- Although the Japan Poison Information Center (JPIC) was in place before the attack, identification of the chemical was complicated by the absence of a method to facilitate information sharing between various centers of excellence and subject matter experts in the case of a chemical incident (Smithson, 96).
- In addition, applicable drugs were not readily available and were insufficiently stocked.

Immediate Response:

- Hospitals and clinics responded by sending doctors and nurses directly to the incident site; however, by the time they arrived the most severe casualties had already been transported to the nearest treatment facility.
- The Tokyo Metropolitan Ambulance Control Center (TMACC) failed to link separate calls received within the first hour of the incident to a common event despite shared casualty descriptions and locations (Larson et al., 27).
- TMACC dispatch was quickly overwhelmed which slowed critical communication and information sharing. Thus, ambulance crews were poorly informed and lacked key information such as which hospitals were receiving their patients (Smithson, 92).
- There was no oversight of treatment facility support capacity, resulting in a few hospitals being overwhelmed while others were underutilized

(Larson et al., 32). Adding to this, thousands of "worried well" cases flooded Tokyo hospitals which significantly decreased the medical surge capacity.
- Immediate medical response was also hindered by other complicating factors to include: late identification of the toxic agent and associated treatment, absence of personal protective equipment (PPE), and distinguishing characteristics for "worried well" cases.

Figure 5 – St. Luke's Chapel Hospital overwhelmed by casualties and worried well (Nakamura, Slide 20)

Triage:

- Pandemonium at the incident locations, issues with secondary exposure, and the pure number of casualties put significant pressure on the EMTs and triage sites. Limited triage occurred near the incident, either within the subway stops or at the exits, severely risking secondary exposure.
- Triage sites offered little assistance because they had no means on-hand (prophylaxis or remedial drugs) to treat the conditions exhibited by the casualties (Smithson, 92).
- Triage sites could have served as incident research and processing areas by identifying the common symptoms, ailments, type of agent, and perhaps distinguishing "worried well" cases and preventing them from inundating the hospitals.

Decontaminate

Emergency Decontamination:

- Some casualties resulted from the secondary contamination of emergency responders and medical personnel. Much of this secondary contamination could have been prevented had the emergency response personnel utilized personal protective equipment (PPE) or used precautionary measures (Beaton et al., 107). Nine percent of the responded EMTs presented with exposure symptoms (Pangi, 435).
- Little to no pre-hospital decontamination of casualties took place, whether they arrived by foot or by ambulance. Since sarin can remain on clothing for 30 minutes, secondary transmission through absorption, inhalation, or contact with the vapor can occur (Beaton et al., 107).
- Simply removing the clothing of victims would have reduced the patients exposure levels, reduced cross-contamination, and prevented responders from becoming exposed.

Figure 6 – First responders at the incident site without PPE (Nakamura, Slide 12)

Other Incidents of Historical Significance

The lessons learned from the response effort during the sarin gas attack on the Tokyo subway are not isolated. There have been several incidents involving chemical, biological, radiological, and nuclear materials over the last 30 years. The consequence management aspect of these incidents has provided lessons learned that parallel those from the 1995 chemical attack.

Sverdlovsk, USSR - Anthrax

On 2 April 1979, an incident occurred at a Soviet biological weapons facility in the city of Sverdlovsk, USSR, resulting in the release of anthrax spores into the city. Over the next several days, citizens downwind were stricken with high fevers and breathing irregularities. At least 68 people died, and countless others were contaminated. The Soviet government covered-up the incident in fear of embarrassment and the repercussions of violating the 1972 Biological Weapons Convention which they had signed. The public was told that the epidemic was caused by the consumption of tainted cow meat. It was not until 1992 that the Russian government admitted that it was an anthrax release from a biological weapons facility (Wampler).

While the Soviet response may have placed greater priority on maintaining secrecy over the welfare of the affected population, the lesson of responsive and accurate information cannot be ignored. The Soviet government's failure to fully inform first responders, consequence managers, and the affected communities of the exact nature of the incident hindered the response effort, increased contamination, and the number of fatalities (Wampler).

United States – Anthrax mailing

From September to October 2001, a series of letters containing anthrax spores were mailed to news media offices and to two US Senators' offices. A total of 22 people were infected by the attacks, five of whom died. In the aftermath of the anthrax attacks, some postal offices were shut down for years and an estimated $1 billion was spent on decontamination of government buildings and postal facilities (Luper, 180).

The US response to the anthrax attacks provides valuable lessons that mirror the Japanese response to the Tokyo subway attacks. Throughout the anthrax response effort, there was a lack of coordination among different federal agencies and local health officials. One hospital in the Eatontown, New Jersey area began offering nasal swabs in response to workers' requests, which was contrary to federal and state guidelines. In another mailing to a US Senator, five days passed before federal officials consulted with local Washington, DC health officials. The health laboratories in Florida and Connecticut (the first and last organizations targeted, respectively) unfortunately learned the identity of the organism via television news reports. Efficient coordination among all responding agencies, from federal to local, is essential in the consequence management effort. Failure to effectively coordinate efforts and accurately disseminate critical information among agencies results in mismanaged efforts and greater health risks to the public (O'Neill, 122, 126-127).

The Way Ahead

A lack of preparedness plans plagued both federal and local responding agencies in all of these incidents. In the pre - 11 September 2001 era, it was difficult for many countries, especially the US, to fully appreciate the threat of terrorism with chemical, biological, radiological, and nuclear materials. The Japanese government had no plans in place to deal with a chemical terrorist event when the 1995 sarin attack took place. The US also had few preparedness plans and training for its first responders before the anthrax attacks in 2001. While the threat of terrorism involving weapons of mass destruction continues to be a real and viable threat, the US has been vigilant in drafting response plans and procedures to cope with this threat.

In the wake of the sarin gas attack, the anthrax attacks, the 2005 London bombings, and other events, the US published the National Response Framework (NRF) in January 2008. The NRF proposes an all-hazards approach to consequence management and draws upon many of the lessons learned from the past 30 years. To eliminate problems of coordination, the NRF, in conjunction with the National Incident Management System (NIMS), calls for a tiered response. Because local jurisdictions have the inherent knowledge of the territory, understand the authorities and legal restraints, and have rapport with the community, incidents should be managed at the lowest possible jurisdictional level and supported by additional capabilities as necessary. The NRF also emphasizes a forward-leaning approach

coupled with engaged partnerships among all levels of government and jurisdictions to improve resource management and operational capabilities (DHS, 4-6, 8-11).

The NRF also outlines the need for coordinated and timely public affairs messages. The Incident Communications Emergency Policy and Procedures section establishes a mechanism to prepare and deliver coordinated and sustained messages regarding incidents requiring a coordinated federal response, and provides for prompt federal acknowledgement of an incident and communication of emergency information to the public during incident management operations. State and local jurisdictions are urged to work together with federal agencies to provide accurate and coordinated public messages regarding health, response, and recovery concerns (DHS, PUB 5-7).

The new and flexible NRF, along with other specific US plans and procedures, will help to eliminate many of the problems that were highlighted in the cases discussed in this article. The tiered approach will improve the effectiveness and efficiency of the response process by coordinating the efforts of all responding agencies. Federal agencies will now work together with state and local jurisdictions under a unified command, rather than a plethora of agencies responding on their own. This synergistic approach will result in greater information sharing among all responding agencies and improve resource and capability management. Accurate, timely, and coordinated public affairs messages will not only improve the response effort, it will calm fears and instill a greater public trust in the government's ability to respond to a CBRN incident. Additionally, improved public affairs guidelines with a greater emphasis on releasing timely and accurate messages to the public will decrease the ever-present dilemma of worried-well, thus allowing medical facilities and personnel to treat the most critical patients, which will effectively decrease the strain on an already stressed system.

A review of the federal response to Hurricane Gustav reveals how many lessons from historical consequence management cases were implemented. The federal and local government response to Hurricane Gustav in September 2008, seems to be an indication that we in the US have learned from the mistakes of the 2005 Hurricane Katrina response, and have benefited from the new NRF and NIMS tiered response and more effective information sharing. Although this wasn't a CBRN event it did test the new national system of response. At time of publishing this article, initial impressions are that the preparation and response to Gustav was a success. The following is an excerpt from a Washington Post article, dated 1 September 2008.

> "As Hurricane Gustav ground through central Louisiana and authorities nervously awaited damage reports, Bush administration officials yesterday were already applauding their performance so far, three years after the misery of Hurricane Katrina. 'I feel good about this event,' President Bush said, crediting the improved response to the "spirit of sharing" between the Republican governors of Gulf Coast states. Federal Emergency Management Agency Administrator R. David Paulison said aboard Air Force One of the response in Louisiana, 'The cooperation is the best I've seen. All the parish presidents, the mayor, the governor, were all on the same page about the evacuations. . . . All four governors, from Texas, Alabama, Mississippi and Louisiana, are all working together also.'"

Conclusion

The swift, effective, and efficient response to a CBRN event promotes both deterrence and recovery by setting the framework to reduce pain and suffering while restoring essential services. But, just as the Japanese had numerous lessons learned in how they responded to the sarin subway attack, the challenge facing the joint reader today is to break the cycle of repeating mistakes made earlier. To accomplish this, we must incorporate these and other lessons into our plans and exercises keeping a "continuous improvement" mentality.

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About the Authors

Mirentxu Arrivillaga, currently employed by Cubic Applications Inc., is a graduate of the Johns Hopkins School of Advanced International Studies (SAIS) where she received her Master’s degree in Strategic Studies. As a CBRNE Exercise Support Team analyst to the Defense Threat Reduction Agency (DTRA), she primarily focuses on foreign consequence management (FCM) and nuclear weapons accident incident exercises (NUWAIX) event support in the European Command (EUCOM), Pacific Command, and Northern Command areas of responsibility (AOR).

Patrick Delaney is currently employed by Cubic Applications, Inc., as a member of the CBRNE Exercise Support Team to the Defense Threat R eduction Agency (DTRA). He is the lead analyst for exercises in the EUCOM AOR.

Supporting Domestic Incident Management

Bryan Strother

This article provides an overview of the Nation's response system and how the Department of Defense (DOD) supports federal departments and agencies in response to a domestic incident, specifically incidents involving a chemical, biological, radiological, nuclear, and high explosives (CBRNE).

Preface

The American public has an unrealistically high opinion of what its government can accomplish in times of emergency. Speedy, lateral communications mean that compelling imagery and eyewitness accounts from the ground level of an incident are on the television and monitor screens of every American long before government responders are on scene. In times of crisis, the demands of citizens – used to seeing an impressive array of capabilities used by the government to project force around the world – will not be pacified by explanations of logistical difficulties, the challenges of interoperability, or such quaint American traditions as federalism and civilian control over the military. But these demands are not unreasonable; it is the responsibility of public servants across the government to employ the taxpayer's tools and systems as efficiently and quickly as possible in order to manage the consequences of an incident. Doing so requires an unprecedented level of understanding by each part of the government of how it fits into the response process. It is especially incumbent on service members to understand how they will support the effort in a CBRNE consequence management response.

Command authority lies with the nation's elected civilians, and the military will always play a supporting role in domestic incident management. Interagency plans recognize that DOD's unique and specialized capabilities can be deployed to accomplish tailored missions and fill critical gaps in civilian response efforts. As a supporting agency, the mindset of all service members involved—from the Private manning the check point to the major general heading the task force—must be one of, "We are here to help." In order to provide the most comprehensive assistance possible in this supporting role, service members should familiarize themselves with the language, procedures, and capabilities of the civilian response structure outlined in the National Response Framework (NRF) and the National Incident Management System (NIMS).

Overarching Federal Response Doctrine

The National Response Framework is the culmination of a series of plans that began with the Federal Response Plan mandated by the Stafford Act of 1988. In its present format, the NRF "is a guide to how the Nation conducts all-hazards response"[1] utilizing NIMS concepts to coordinate resources across the response spectrum. Specific authorities and responsibilities are encapsulated in the Support and Incident Annexes and 15 Emergency Support Function (ESF) Annexes. While the Support and Incident Annexes address the nuances of specific and/or more complicated incidents (e.g., international coordination or biological incident), the ESF Annexes provide the structure and responsibilities of how the federal government will provide resources to the affected State(s).

At the tactical level where on-scene emergency management is directed, deployed assets report to the incident command post (ICP) or area command, established either at the scene or in close proximity to the incident site. The ICP, or area command managing multiple ICPs if established, provide information to the operational entities above them – usually a permanent emergency operations center (EOC) or an activated multi-agency coordination center such as a joint field office (JFO) [See Figure 3] – that uses the information to coordinate activities and provide support to the tactical units. At the highest level are the policymakers and cabinet officials making strategic decisions based on the overall situational picture provided by the operational level.

Within the four NIMS Incident Command System (ICS) sections – Operations, Planning, Logistics, Finance/Administration – the NRF utilizes 15 emergency support unctions as "mechanisms for grouping functions most frequently used to provide

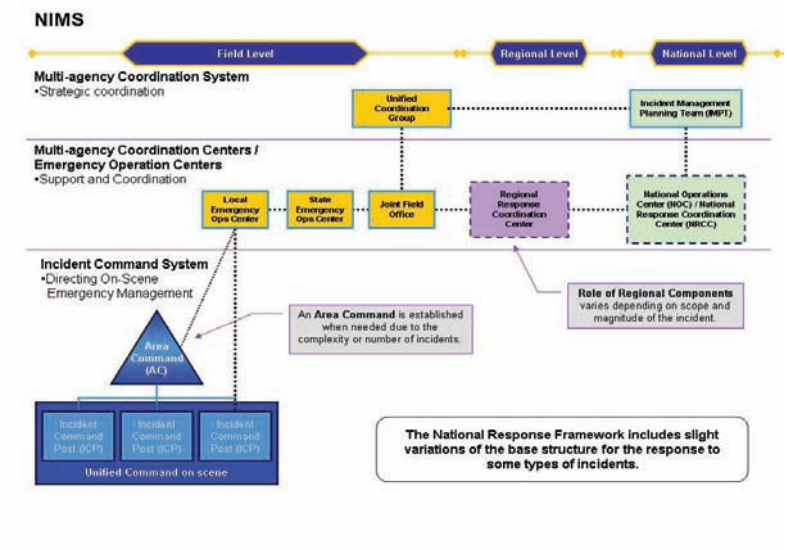

Figure 1 - Federal Implementation of NIMS

Federal support to States and Federal-to-Federal support."[2] The ESFs are the skeleton of domestic incident management, identifying and categorizing responsibilities in areas such as transportation, communications, public safety and security, and external affairs. Utilizing NIMS concepts, ESFs are assigned to one or more branches, units, or groups established under the four sections. Each ESF has a single coordinating agency and multiple primary or supporting agencies – cooperating agencies. Because Defense Support to Civil Authorities (DSCA) can fall under any category of the federal response, DOD is considered a supporting agency under each and every ESF.

At the Secretary of Defense's discretion, a defense senior official may be deployed to the unified coordination group as his personal representative; however, the single point of contact in the JFO through whom DOD support may be requested continues to be the defense coordinating officer (DCO). The DCO is a standing O-6 billet, with one assigned to each of the 10 FEMA regions. The DCO and supporting defense coordinating element (DCE) process mission assignments generated by the federal coordinating officer (FCO) and state coordinating officer (SCO) and delegated by the ESFs. These mission assignments are validated by US Northern Command (USNORTHCOM) and approved by the Secretary of Defense before being turned into orders for DOD assets in the area of operations. The DCO has command of all DOD forces dispatched to assist unless or until a separate joint task force (JTF) is established. At no time do DOD forces fall under direct civilian control other than the National Command Authority.

As outlined in the NRF and per the Homeland Security Presidential Directive 5, *Management of Domestic Incidents*, "the Secretary of Homeland Security is the principal Federal official for domestic incident management"[3] causing the Department of Homeland Security's (DHS) National Operations Center (NOC) to be the nerve center for domestic situational awareness, information sharing, and operations coordination. The NOC watch team collects and collates information received from states, critical infrastructure/key resource owners and operators, private-sector entities, non-governmental organizations, military and federal responders, and the media to create and distribute a common operating picture (COP) for the response spectrum, with the primary consumer being the White House. The NOC maintains the COP on the Homeland Security Information Network (HSIN), a collaborative communications tool accessible by emergency operations centers in all states and territories, over 50 major urban areas, many overseas embassies, and all federal operations centers. The COP contains the national situational reports, spot reports, and executive summaries which cabinet officials and the White House can view from their desks.

- ESF 1: Transportation (DOT)
- ESF 2: Communications (NCS)
- ESF 3: Public Works and Engineering (USACE)
- ESF 4: Firefighting (USDA)
- ESF 5: Emergency Management (DHS)
- ESF 6: Mass Care, Emergency Assistance, Housing, Human Services (DHS)
- ESF 7: Logistics Management and Resource Support (GSA)
- ESF 8: Public Health and Medical Services (HHS)
- ESF 9: Search and Rescue (DHS)
- ESF 10: Oil and Hazardous Materials Response (EPA)
- ESF 11: Agriculture and Natural Resources (USDA)
- ESF 12: Energy (DOE)
- ESF 13: Public Safety and Security (DOJ)
- ESF 14: Long-Term Community Recovery (DHS)
- ESF 15: External Affairs (DHS)

Figure 2 - Emergency Support Functions and designated Coordinating Agencies

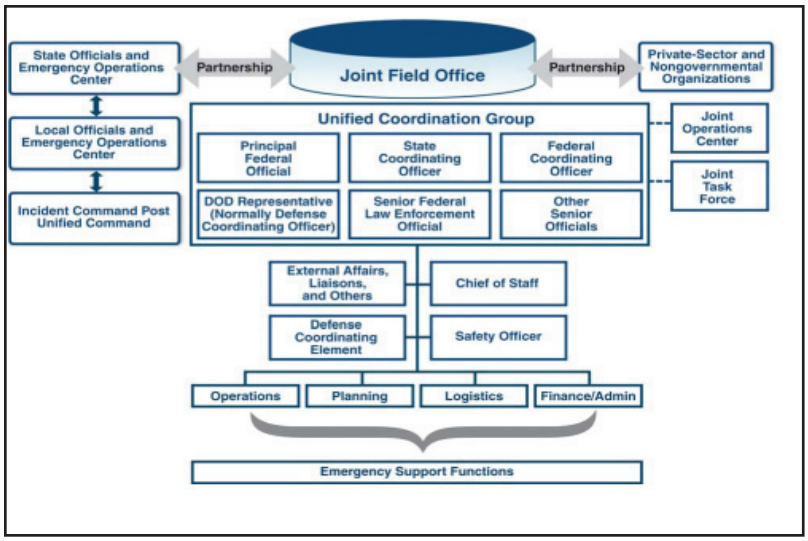

Figure 3 - An overview of the Joint Field Office and its key components", graphic taken from the National Response Framework, page 63, January 2008.

Upon notification of an incident, the NOC watch team will create an event tab in the HSIN COP, allowing responding departments and agencies to post information and begin developing situational awareness. Because the NOC is comprised of representatives from the majority of federal departments and agencies, and to select state and local law enforcement offices, operation centers in the various headquarters are notified by their representative or through an interagency conference call, depending on the type of incident. Based on the severity of the incident, other federal watch centers such as the Federal Emergency Management Agency (FEMA) National Response Coordination Center (NRCC) and affected regional response coordination centers (RRCC) activate their staffs, alert assets for potential deployment, and initiate their organization's appropriate response procedures. Serious incidents will also drive activation of the domestic readiness group, a strategic level interagency policy group chaired by the Homeland Security Council formed to address issues requiring strategic policy coordination. Initial assessment teams tasked with evaluating the severity of the situation and making recommendations as to the level of federal response required may be dispatched, including USNORTHCOM's Situation Assessment Team.

Interagency Assets and Capabilities

As previously mentioned, the DHS NOC is the primary interagency nexus for domestic incident management. The national response coordination center and the national infrastructure coordinating center are standing elements of the NOC and serve as other examples of wide-spectrum interagency operations centers. However, many individual departments and agencies maintain operations centers that can be heavily involved in a response.

The primary Department of Justice operations center is the Federal Bureau of Investigation's (FBI) Strategic Information and Operations Center (SIOC). The SIOC is "the focal point and operational control center for all federal intelligence, law enforcement, and investigative law enforcement activities related to domestic terrorist incidents or credible threats, including leading attribution investigations."[4] While these activities may be more a function of crisis management rather than consequence management, circumstances may dictate close cooperation between agencies trying to mitigate the damage from an attack and those trying to prevent another attack from occurring.

Individual agency operations centers will vary in importance depending on the type of incident and their assignment to a relevant ESF. A radiological or nuclear

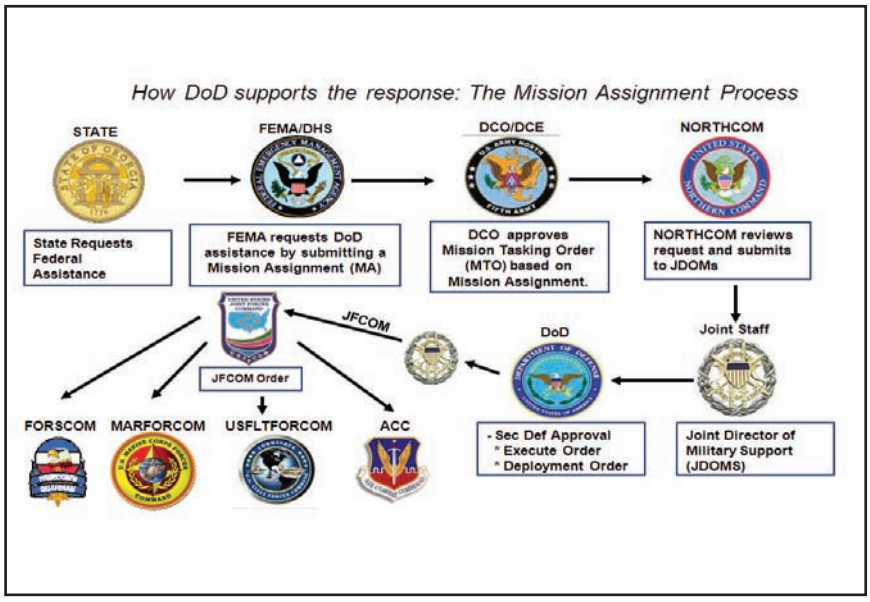

Figure 4 - The Mission Assignment Process

event will require the Department of Energy's (DOE) technical expertise and specialty assets. Any event involving mass casualties would initiate planning at the Department of Veterans Affairs (VA) 24 hour operations center. The VA is an important supporting agency within ESF #8, Public Health and Medical Services, and possesses not only the largest number of available hospital beds in the country within a single system, but also the largest pool of trained mental health practitioners equipped to deal with the psychological after effects of an attack. But the activities of every EOC drawn into the response will be similar: alert and notification, information sharing, resource assessment, and planning for deployment of specialized teams.

The number and variety of these special teams can be daunting. The National Oceanic and Atmospheric Administration alone has six separate teams listed in the Catastrophic Incident Supplement to the National Response Plan[5] as deployable assets in the event of a CBRNE incident. Almost every organization across the federal government can muster a team to support response efforts. To the outside observer, many of these teams may seem to represent duplication of effort. Do the duties of the FEMA Veterinary Medical Assistance Team differ sufficiently from those of the Department of Agriculture's Veterinary Diagnostic Team to warrant two teams? Some, such as FEMA's Volcano Disaster Action Team, may seem a bit narrowly focused. Despite the interagency's diverse spectrum of expertise, there are some critical gaps with high demand/low density assets where DOD can anticipate a mission assignment.

Massive airlift is a capability unique to DOD not only within the US Government, but around the world. During the May 2008 Sichuan earthquake, Chinese state television reported the Chinese government had mustered around 150 helicopters to assist with the response. Under ESF #1, Transportation, the Department of Defense alone provided twice that number of helicopters for the Hurricane Katrina response in 2005, even while a substantial portion of its rotary wing assets were deployed out of the country.[6] With the exception of the United States Coast Guard, no other organization within the federal government maintains a large number of helicopters. Fixed wing transport, necessary to move response teams and equipment across the country and perhaps later, to move food, fuel, and supplies is also a prized commodity. DOE's Federal Radiological Monitoring and Assessment Center (FRMAC), for example, relies on the US Air Force to provide transport for many tons of specialized equipment.

Any incident involving CBRNE elements will require numerous specialized assets and equipment. Much of the capacity for responding to these events resides at the state and local level with hazardous materials (HAZMAT) teams and National Guard units, in particular the National Guard Civil Support Teams and CBRNE enhanced response force packages. However, as these are state-owned resources, only the governor can authorize their deployment to an incident in support of the state's citizens or to augment another state's capabilities. Unless the National Guard is federalized, they remain under the governor's purview. If multiple events occur, overwhelming a single state's ability to deal with a CBRNE incident, governors of neighboring states may not be willing to send their own assets to assist, knowing their own jurisdiction may be in danger of attack. The unique challenges of response under a federal system of government can hamper the concentration and employment of resources where needed. Of course, this dilemma need not arise to drive DOD involvement. The scale of the incident could simply be such that all other available resources are overwhelmed.

To help expand the federal capabilities to CBRNE incidents, DOD developed the CBRNE consequence management response force (CCMRF), which utilizes CBRNE qualified units to form task forces and support domestic incident responses as required. While the CCMRF may contain specialized units such as chemical companies and the US Marine Corp's chemical/biological incident response force, the nature of the incident could require more airlift, communications, or medical support than the CCMRF can provide.

The interagency can provide a substantial amount of medical support through the Department of Health and Human Services (HHS) and ESF #8, Public Health and Medical Services, for which HHS is the coordinating agency. HHS includes the United States Public Health Service, a uniformed service composed of 6,000 commissioned medical professionals, which can provide all manner of tailored response teams. HHS also manages the National Disaster Medical System, which includes regionally organized disaster medical assistance teams along with mortuary affairs, nursing, and pharmaceutical distribution capabilities. Large

quantities of medical supplies and drugs are maintained in easily transport-able "push packages" by the Centers for Disease Control's strategic national stockpile. Even with these capabilities and those provided by supporting agencies such as the VA, DOD medical assets would be quickly employed in any large scale mass casualty event.

Military Support to Law Enforcement Agencies

In domestic incident management, protecting the population is always a top priority. ESF #13, Public Safety and Security, led by the Department of Justice's Bureau of Alcohol, Tobacco, Firearms and Explosives, identifies "all federal departments and agencies possessing a public safety and security capability"[7] as supporting agencies. In practice, this means any federal employee in a law enforcement or security position, from FBI agents to park rangers to special agents from the Peace Corps Inspector General's Office, can be deployed to maintain order and protect lives and property during response activities. Varying arrest powers may require ESF #13 responders to be deputized by state authorties.

A wide variety of non-law enforcement personnel and equipment can also be deployed under this ESF, including engineers, technicians, aircraft, and specialized vehicles.

Employment of DOD forces under ESF #13 is a sensitive subject. The *Posse Comitatus Act of 1878* (PCA) limits the ability of the government to employ active duty military or federalized National Guard troops in a law enforcement capacity. A more thorough discussion of PCA issues can be found in the article entitled "CBRNE CM Legal Considerations for the Joint Warfighter."

Conclusion

The National Incident Management System was developed to provide a consistent framework across the federal, state, and local government to increase the nation's ability to integrate response assets more effectively and efficiently. All plans are mandated to be "NIMS compliant" and thus built on the same organizational principles and structure. The military continues to strive to revise their plans and unit structures to adhere to the principles, terminology, and systems to better support the nation in event of natural, man-made, or terrorist incidents requiring a coordinated response.

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[1] National Response Framework, January 2008, page i.

[2] National Response Framework, January 2008, Emergency Support Function Annexes Introduction.

[3] Homeland Security Presidential Directive 5, *Management of Domestic Incident Management,* http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html, 28 February 2003.

[4] NRF, page 57.

[5] Until revised, the Catastrophic Incident Supplement remains a part of the National Response Plan, the NRF's predecessor.

[6] http://www.defenselink.mil/news/newsarticle.aspx?id=17402

[7] NRF, Emergency Support Function #13 – Public Safety and Security Annex, page ESF #13-1.

About the Author

Bryan Strother was until recently employed as an analyst with Cubic Applications, Inc as an Exercise Team Leader supporting the U.S. Department of Homeland Security and the Defense Threat Reduction Agency. His responsibilities entailed support for Top Officials 4 (TOPOFF 4), the Tier I National Level Counterterrorism Exercise, in addition to Foreign Consequence Management exercise events in the PACOM and EUCOM areas of responsibility. He is a graduate of the University of Virginia with a degree in Foreign Affairs and served four years in the United States Air Force Security Police.

CBRNE CM LEGAL CONSIDERATIONS FOR THE JOINT WARFIGHTER

Joseph J. Urgese
G. Roderick Gillette
DTRA Office of the General Counsel

SYLLABUS

The most common legal issues associated with Department of Defense (DOD) domestic and foreign CBRNE [chemical, biological, radiological, nuclear, and high explosive] consequence management (CM) activities are not typical to ordinary military operations. Depending on the circumstances, the scope and complexity of legal issues will greatly vary. In the domestic context, the interplay between the public and private sectors requires, among other issues, careful consideration of sources and accounting of funding, use of force, information sharing, and complex interagency coordination under the rubric of the National Response Framework. Equally challenging in the foreign context is the role of the host nation, as well as the interplay between the Department of State as the lead federal agency and other federal agencies such as the Department of Defense that have the means and expertise to assist in consequence management overseas. In both the domestic and foreign consequence management situations, incorporating legal considerations during the deliberate planning process will allow joint task force commanders to better identify critical legal issues at the outset of an event, gather any additional information or recommendations from the joint staff, and enable commanders to make informed decisions to ensure an appropriate and an effective DOD response.

INTRODUCTION

In January 2008, the National Response Framework (NRF) took effect.[1] The NRF replaced the National Response Plan and implements the National Incident Management System (NIMS). It established guidelines for domestic response to all types of natural andman-made events, linking all levels of government, nongovernmental organizations, and the private sector. The NRF also operates along a patchwork of intersecting legal regimes. Woven through it are the governing policies, statutory authorities, and fiscal appropriations that make up the legal framework for domestic consequence management response. DOD and all public and private CBRNE CM responders are guided by this legal framework. Similarly, DOD is subject to laws and policies that specifically apply to its response during consequence management incidents.

A CBRNE environment poses major operational and legal challenges.

As discussed at the end of this article, a different set of rules and regulations apply for foreign consequence management (FCM). The applicable legal framework for a FCM incident requires a thorough understanding of the distinctions between the US response to domestic and foreign CBRNE situations.

This article is intended to highlight some of the legal considerations that apply to DOD's role in domestic consequence management (often referred to as Defense Support of Civil Authorities (DSCA)) and in responding to a FCM event. First, an overview of the federal government's CBRNE CM response is provided to establish the general ground work for domestic response activities. Next, the authorities underlying the National Response Framework for DOD's DSCA activities is included to highlight the varying levels of responsibilities and basis for DOD operations in support of civilian authorities responding to an incident. Various legal issues specific to DOD CBRNE CM response will be identified. Finally, a short review of the legal aspects regarding FCM illustrates the unique considerations involved with DOD consequence management activities abroad.

I. Overview of the Federal CBRNE Response

> **The federal government should work with its homeland security partners in revising existing plans, ensuring a functional operational structure—including within regions—and establishing a clear, accountable process for all national preparedness efforts.**[2]

In the aftermath of 11 September 2001 (9/11), and after analysis of the federal response to Katrina, the United States government (USG) extensively revamped the laws, policies, and procedures that apply to domestic emergencies. While much has changed, two basic concepts continue to apply; one in general and another specifically regarding the DOD role in such situations. First, the federal government recognized that, to the extent possible, local and state authorities will generally provide the initial response, and may be able to deal with the consequences of many events without federal government assistance. Next, **when federal government resources are needed, DOD will most likely be in a supporting role, unless otherwise directed by the president.**

Generally, DOD forces will support civilian emergency responders in consequence management situations.

In a domestic setting, federal consequence management was often historically thought of in the context of a response to natural disasters, such as hurricanes, floods, or devastating fires. But after 9/11, an "all-hazards" approach to planning and responding was adopted so that generally, one process would be used for both natural disasters and man-made events, to include acts of terrorism.[3] Regardless of the type of event, the current legal regime, plans, and policies recognize that in many cases, the state and local authorities will be the first on the scene. In addition, there is recognition that the state and local governments may be able to manage the consequences of the event either unilaterally, or with assistance from neighboring states, but, in either case, with little or no federal assistance.[4]

If federal assistance is needed, the Department of Homeland Security (DHS) will, in most cases, have responsibility for coordinating the overall federal response. However, other federal agencies may have a role in coordinating aspects of the federal response (e.g., the Department of Justice has responsibility (often through the FBI) for coordinating the federal law enforcement response to an incident). As explained in more detail below, the NRF describes how the various tiers of capabilities interlink in common response situations. The NRF also includes specialized response guidelines for CBRN and terrorist incidents in its annexes.

As noted, if DOD resources are requested and approved as part of the federal response, in most instances the Department of Defense will act in a cooperating role. The use of DOD capabilities in these circumstances is generally referred to as DSCA.[5] As further explained below, the NRF designates cooperating agencies and supporting agencies for specific types of events and for specific responsibilities arising from or related to CM incidents. Because of DOD's unique capabilities and responsibilities with respect to national security assets and homeland defense, an understanding of the legal framework within which DOD conducts response operations is critical.

II. Legal Framework for Defense Department Support to Domestic CBRNE Response and Specific Legal Issues

> [The] National Response Framework is a guide to how the Nation conducts all-hazards response.[6]

The president, acting under the authority of Article II and Article IV of the Constitution, has responsibility to protect the states from invasion and domestic violence. Congress shares this responsibility by providing enabling legislation to allow the executive agencies to carry out homeland defense and security missions.[7] Pursuant to these constitutional authorities,

the Homeland Security Act of 2002, Homeland Security Presidential Directives (HSPD)-5 and 8, the Department of Homeland Security promulgated the National Response Framework on 22 January 2008.[8] Among other things, the NRF implements the provisions of HSPD 5 that designate the Secretary of DHS as the principal federal official, in most cases, for coordinating federal resources and capabilities in response to domestic terrorist attacks, major disasters, or other emergencies. Other federal agencies, however, may have a role in coordinating the federal response to certain types of events and/or aspects of an event (e.g., as noted, Department of Justice/Federal Bureau of Investigation (DOJ/FBI) will generally coordinate the federal law enforcement activities after a terrorist incident, and DOD will coordinate aspects of the federal response to an accident or incident involving a nuclear weapon under DOD control).[9]

The National Incident Management System was also established pursuant to HSPD 5. NIMS provides a consistent nationwide template to enable all government, private-sector, and nongovernmental organizations to work together during domestic incidents. NIMS provides a set of standard organizational structures, as well as requirements for processes, procedures, and systems designed to improve operability among federal, state, and local agencies and entities responding to a disaster. Essentially, NIMS provides the "nuts and bolts" of the US government response to domestic incident management.[10] **The Department of Defense has mandated that DOD forces comply with the NRF and NIMS when they provide support to domestic emergency response efforts.[11]**

The various Federal, state, and local pieces of domestic consequence manage-ment response are integrated under the NRF.

The primary authority for federal disaster response is found in the Robert T. Stafford Disaster Relief and Emergency Assistance Act.[12] This legislation establishes a means by which the federal government may supplement state and local resources in major disasters or emergencies, where those state and local resources have been or will be overwhelmed. In most circumstances, federal funding and capabilities may be provided under the Stafford Act to assist local and state responders to a major disaster at the request of the governor of the affected state. In other circumstances, the president may unilaterally declare a federal emergency that triggers funding under the Stafford Act when there is a close nexus to federal interests, and the affected state(s) require assistance to mitigate damage caused by the event. Once invoked, the Stafford Act provides the basis to fund federal support to afflicted states. DHS, usually acting through the Federal Emergency Management Agency (FEMA), manages the funds and matches federal agency capabilities with response needs through a federal coordinating officer (FCO). As described further below, the funding approval mechanism that will ensure DOD reimbursement is an important process that must be monitored by DOD forces responding to a Stafford Act disaster/incident. It is worth noting that **even if there has not been a disaster declaration that triggers application of the Stafford Act, the NRF and NIMS will generally still be applied by any federal agencies, including DOD, that provide domestic consequence management support.[13]**

In 2006, Congress expanded the Stafford Act to provide funding for federal assistance to affected states, even in cases where the state has not made an official request. Congress thereby authorized prepositioning of federal capabilities and assets where the president has declared a state of emergency and there are significant federal interests. Thus, in cases where there is a close federal nexus to an event, Stafford Act funding may be available to assist states in managing the consequences from certain events, whether or not the state formally requests federal assistance.

Depending on the scope of the incident, DHS, through FEMA, may designate a FCO to manage the overall coordination of the federal assistance to and with local, state, and federal agencies. If DOD efforts/resources are specifically required, a defense coordinating officer (DCO), collocated with the relevant FEMA regional offices, would usually coordinate with the US Northern Command for the appropriate DOD capability. At all

times, DOD personnel and units remain under the command and control of DOD, unless otherwise directed and approved by the Secretary of Defense (SECDEF). Thus, **while DOD personnel may find themselves providing support to another government agency that has primary responsibility for a particular domestic response under the NRF, DOD direction and control resides with its commanders.** The same holds true for other government agencies that support DOD when it has a role in coordinating federal activities.

As noted, in some instances, a CBRNE event may have a close federal nexus that will allow for Stafford Act funding (e.g., an event on or near a military installation or other federal facility), even without a formal request from the affected state(s) for federal assistance. The Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs (ASD-HD/ASA) is the DOD executive agent responsible for approving and monitoring DOD assistance for federal, state, and local officials in responding to domestic threats or events involving nuclear, chemical and biological weapons.[14] As such, if DOD CBRNE CM support is to be provided domestically, with or without a request from a state government, ASD-HD/ASA will generally be responsible for reviewing and authorizing the DOD assistance. A number of laws, rules, and regulations apply to this process and to the provision of DOD CM support.

Accordingly, the sections that follow will address the legal framework for DOD support to civil authorities in general disaster situations, CBRNE events and even more specifically, DOD's unique coordinating role in nuclear and radiological events under certain circumstances.

III. LEGAL ASPECTS OF MILITARY/ DEFENSE SUPPORT TO CIVIL AUTHORITIES IN CBRNE CM RESPONSE

> Military Support to Civil Authorities (MSCA). A mission of civil support consisting of support for natural or man-made disasters, chemical, biological, radiological, nuclear, or high-yield explosive consequence management, and other support as required.[15]

Having set forth the general concept of the NRF and the underlying legal framework for DOD responses to CBRNE events, it is important to briefly highlight the general legal considerations associated with DOD's most frequent supporting role for domestic events, commonly referred to as Defense Support of Civil Authorities (DSCA).[16] **The term DSCA is an overarching term used to describe DOD's response to requests for support to other agencies in a variety of circumstances, but most commonly in the event of a domestic emergency or disaster. These events include CBRNE events.** Therefore, it is useful to describe the legal considerations associated with DSCA in general, while also highlighting some of the special legal issues that may arise in a CBRNE CM situation.

Aside from a commander's immediate response authority (as explained below), DOD normally receives requests for assistance through interagency channels. State authorities or other federal agency officials may provide a written request for specific DOD capabilities. Unless pre-approved for a particular type of support, for a particular type of event through a standing execution order,[17] virtually all requests for CBRNE CM response assistance must be approved by SECDEF or his designee before DOD can employ forces in response to an event. A commander's immediate response authority provides a limited exception.

a. Immediate Response Authority.

> Requests for an immediate response (i.e., any form of immediate action taken by a DOD component or military commander to save lives, prevent human suffering, or mitigate great property damage under imminently serious conditions) . . .[18]

The critical components of a commander's immediate response authority (IRA) are (1) a request from the civil authority; (2) the provision of support requested is within the DOD component's capability; and (3) the danger to life, human suffering, and great property damage is imminent. When these conditions exist and time does not permit prior approval through command channels, commanders are authorized (subject to existing supplemental direction and notification procedures) to take the necessary action to respond.

This authority only applies until local, state, or federal authorities can take control of the response effort (generally considered to mean within a 72-

hour period from when the emergency/attack occurred).[19] The responding military forces must notify the National Military Command Center (NMCC) thru command channels and obtain approval for providing ongoing assistance and any additional support that has been requested. [20]

Different rules can apply when immediate DOD assistance is required to save lives.

Numerous legal issues may arise regarding immediate response authority in a CBRNE CM situation. For example, if civilians have been exposed to hazardous materials, DOD may have the closest decontamination resources. If DOD civilians or contractors are part of the element that is providing emergency response in such a situation, there may be a question as to the applicable exposure guidelines and restrictions that are to be applied.[21] If non-service members may be part of the response element, the military commander should consult with his/her legal advisor in deciding who should provide the immediate response efforts. In addition, since the individuals providing the response may suffer long term health consequences resulting from exposure to a CBRN situation, this can result in claims against the federal government many years later. Accordingly, care should be taken to establish the types and levels of exposure, and to properly retain and maintain that information and related medical records.

b. Mutual Assistance Agreements

Mutual Assistance Agreements (MAA) may prove critical to the employment of emergency response forces at or near DOD installations. **Installation commanders have the authority to enter into MAAs with local emergency response authorities to ensure the safety and security of DOD personnel and equipment on the installation and in the surrounding environment.** In general, DOD support is provided on a reciprocal basis to local authorities, and can include mutual response assistance for fire, medical, and hazardous materials emergences.[22] Recently, the statutory authority pertaining to the MAAs was expanded to allow for mutual support to deal with various CBRNE CM response activities.[23] Military installation commanders should work closely with their legal advisors to draft MAAs that both meet the installation's needs and also provide a vehicle for providing emergency CBRNE CM aid using the capabilities available to the commander. The commander should also utilize his/her legal advisor to ascertain the level of support that can be provided to a local community without reimbursement or having to rely on other authorities or processes for providing DOD CBRNE CM response assistance.

c. Posse Comitatus

Except as expressly authorized by the Constitution or by another Act of Congress, the *Posse Comitatus Act* (PCA)[24] prohibits as a criminal offense, the use of the Army, the Air Force, and through DOD policy, the Navy and Marine Corps as enforcement officials to execute the laws. However, the PCA does not apply to

The The Posse Comitatus Act places restrictions on using DOD forces for law enforcement activates, unless various exceptions apply.

National Guard members operating under the authority of the State or pursuant to Title 32. Due to its statutorily based law enforcement functions, the PCA is effectively inapplicable to the US Coast Guard, even when it is task organized under the Navy.[25]

As a practical matter, the PCA generally prohibits DOD's ability to directly assist local officials for law enforcement purposes unless one of the exceptions described below is clearly applicable:

(1) Constitutional Authority of the President. As Commander in Chief of the Armed Forces and as Chief Executive of the US, the president is required to "take care that the Laws be faithfully executed" and to take measures necessary "to protect and defend the Constitution of the United States." These responsibilities have generally been interpreted to include two express Constitutional exceptions to the PCA: (1) immediate response authority to an emergency involving imminent loss of life, limb, or significant property; and (2) defense of national security interests to protect US personnel and property. These exceptions are largely included in specific statutory PCA exceptions and are incorporated into DOD policies.

(2) Statutory Exceptions. The following are a few of the many statutory exceptions to the PCA:

- 18 USC §831, Assistance with Crimes Involving Nuclear Materials: At the request of the Attorney General and in an emergency situation, the SECDEF may authorize DOD personnel to provide direct support to civilian authorities to protect nuclear materials.
- 10 USC §331-335, the Insurrection Act: The set of laws that govern the President of the United States of America's ability to deploy troops within the United States to put down lawlessness, insurrection and rebellion.
- 10 USC §382, Emergencies Involving Chemical or Biological Weapons of Mass Destruction. If the Attorney General and the Secretary of Defense jointly determine that an emergency exists involving chemical or biological weapons of mass destruction, the Secretary of Defense may provide resources and personnel to assist civil authorities regarding the enforcement of certain Federal criminal laws.
- 10 USC §371-382, Military Support to Civilian Law Enforcement Agencies: although not an exception to the prohibition against direct engagement in the execution of the law, the US military may assist State and local law enforcement agencies with certain activities. (See discussion of DOD's implementation of this authority below)

(3) Military Purpose. DODD 5525.5, "DOD Cooperation with Civilian Law Enforcement Officials," provides guidance on the type of assistance that DOD can provide to local authorities when assistance is considered primarily for a military purpose and does not violate the PCA. In general, the less directly related the situation is to civilian law enforcement and the more it is related to a military purpose, the less applicable is the PCA. Some examples include: (a) investigations and actions related to the enforcement of the Uniform Code of Military Justice; and (b) protection of classified military information or equipment.

In most circumstances, the SECDEF, acting under the authority of the president, has ample authority and flexibility to direct DOD support to civilian law enforcement under the exceptions to the PCA described above. However, it is important to identify the exact conditions requiring such support, the effect the allocation of DOD assets might have on other DOD missions, the accompanying interagency and interdepartmental coordination prerequisites and the public perception and future consequences of having the military involved in civilian law enforcement missions. Accordingly, commanders and leaders in DOD components should consult their servicing legal advisors for guidance in specific circumstances.

A CBRNE incident that involves criminal/terrorist activity would undoubtedly create a situation where the US government would want to use every available resource to catch the perpetrators and prevent follow-on attacks. As noted above, there are statutes that provide exceptions to the PCA under CBRNE circumstances. Commanders should, as with any PCA exception situation, coordinate closely with their legal advisors if involved in any activities under these statutes, as they are complex and impose unique requirements. For example, under 10 USC § 382, which applies to a weapon of mass destruction (WMD) incident, military personnel still generally may not make arrests, participate directly in searches or seizures of evidence, or participate directly in intelligence collection for law enforcement purposes, unless such action is necessary for the immediate protection of human life and cannot be accomplished by law enforcement personnel.[26] On the other hand, DOD law enforcement assistance under 18 USC § 831, which deals with the prohibition of transactions involving nuclear materials, may include the authority to arrest persons and conduct searches and seizures, as well as "such other activity as is incidental

to" its enforcement or to protect persons or property from the proscribed conduct.

d. Rules for the Use of Force.

In 2005, the standing rules for the use of force (SRUF) were consolidated into a Joint Chiefs of Staff Instruction that applies to US forces during all DOD civil support and routine antiterrorism and force protection (AT/FP) duties occurring within the US territory or US territorial seas.[27] The SRUF also apply to all DOD personnel (including contractors), performing law enforcement and security duties at all DOD installations (and off-installation while conducting official DOD security functions), unless otherwise directed by the SECDEF. The 2005 SRUF supersedes all previous DOD use of force guidance. Additionally, it is important to emphasize that the SECDEF still retains the sole authority to permit DOD personnel to carry arms off of DOD installations, except as specified in DOD guidance.[28]

In limited circumstances, specialized Rules for the Use of Force (RUF) may apply to, for example, Navy and Coast Guard missions or counterdrug security operations.[29] Otherwise, the 2005 SRUF above will generally apply to DSCA missions. In the event that specialized RUF are necessary, the SRUF specifies that US Northern Command (USNORTHCOM) is responsible for submitting its theater, mission-specific RUF through the Chairman of the Joint Chief of Staff for SECDEF approval. In most cases, and in the absence of an approved mission-specific RUF, the SRUF applies to all US military forces operating in support of civilian functions in the USNORTHCOM area of responsibility.

Rather than focusing on the law enforcement nature of domestic operations, the consolidated SRUF now uses terms most familiar to service members (e.g., "hostile act" and "hostile intent" are used to determine when force may be appropriate). These terms and their definitions are largely based on principles of individual/collective self-defense and are consistent with the basis for the standing rules of engagement (SROE).[30] **While the SROE is fundamentally permissive, the SRUF is restrictive in nature and provides that "deadly force is to be used only when all lesser means have failed or cannot reasonably be employed."**

Additionally, the SRUF requires that service members apply all uses of force (deadly and non-deadly) only in instances directly related to the assigned mission. Defense of service members and defense of US forces are always directly related to the mission. However, deadly force may only be used to defend non-DOD personnel in the vicinity when directly related to the assigned mission. DOD support to law enforcement and other government agencies at a particular incident site or a geographically defined disaster area are two very distinct examples of the relationship between of DOD support to civilian authorities and the RUF.

As noted, the basis for DOD's participation in a disaster situation might be the Stafford Act, which, by itself does not authorize direct military participation in law enforcement. While at a CBRNE incident site, however, there may be a need for security that results in a request for DOD assistance in establishing a perimeter. Even if a PCA exception is applied, the potential need for the use of force is the very basis for the requested DOD support. It is therefore critical that commanders and leaders carefully define the mission's scope to address circumstances such as a service member witnessing a violent crime that is in the vicinity of the mission but which does not have a direct relationship to the assigned mission.

Due to various legal considerations, including potential PCA restrictions, the consolidated SRUF are limited to missions that are typically conducted in domestic settings. Thus, approved RUF for DSCA or CBRNE missions will most likely apply to security or protection of DOD assets that relate to or are responding to the event, e.g., securing federal property, assets or personnel in a National Defense Area (discussed more below), or providing equipment and personnel to assist in disaster relief. It is equally critical that clearly written RUF are coordinated with and disseminated to all on-scene non-DOD law enforcement or security personnel to avoid confusion and inconsistent responses in self-defense. To address these considerations, any approved mission-specific RUF must be carefully tailored to accommodate the following SRUF guidance:

> (1) Self-Defense. Force authorized in self-defense is based on the nature and immediacy of the threat. There must be a hostile act and/or demonstrated hostile intent, which include a threat of force to preclude or impede the mission and/or duties of US forces, including the recovery of US personnel or vital USG property.

(2) De-escalation of Force. If force is needed, the least means to neutralize the threat must be used, e.g. verbal warnings, etc. Deadly force is to be used only when all lesser means have failed or cannot reasonably be employed.

(3) Directly related to the assigned mission. Use of force to protect non-DOD personnel in the vicinity must be directly related to the assigned mission. While not defined by the SRUF, the non-DOD personnel must be in proximity and have such gravity of effect that to not intervene would adversely impact DOD's mission.

In the domestic context, DOD RUF should be carefully tailored to each mission to ensure that service members understand when and to what degree force is authorized to protect designated persons and property. Accordingly, USNORTHCOM's approved RUF should be standardized and disseminated to all DOD personnel responding to a particular domestic incident to ensure consistency, accuracy and synchronization with other government agencies. In advance of any real-world event, DOD personnel should be provided with an approved RUF Card that forms the basis of frequent training using realistic scenarios. Paragraph 10.L.1 of the Standing CJCS DSCA Execute Order (EXORD), dated 282000ZMAY08, also requires unit commanders to ensure their personnel receive an SRUF briefing prior to deploying from home station for a DSCA mission.[31] Such training must be conducted with experienced observers and must be reinforced by commanders and leaders at all levels.

e. Fiscal Law and Other Legal Considerations

As with domestic natural disaster DSCA missions, DOD's role in CBRNE CM will typically be in a supporting or cooperating role. As noted, DOD will generally provide assistance by the coordinating agency only upon request by the appropriate authority and approval by SECDEF or his designee.[32] If the Stafford Act is in effect, such requests should generally be reviewed by FEMA to ensure, among other things, that no alternative to federal assistance is available/practical and that DOD is the best federal agency to provide the requested assistance. Once FEMA has vetted the assistance request it will issue a Mission Authorization – effectively a work order to DOD. Once this Mission Authorization is approved, pertinent DOD response forces will know that they can perform the requested assistance, and that DOD will be reimbursed for its costs. The burden is on the DOD response forces to show compliance with the applicable FEMA procedures.[33] Military commanders should work closely with their legal advisors if they have any questions concerning this process. This is especially the case if some other funding avenue, such as the Economy Act, is being used, or if an exception, such as Immediate Response Authority, is the basis for the DOD support.

Given DOD's unique capabilities and expertise in CBRNE areas, the NRF specifies DOD's cooperating role in the CBRNE event-related annexes: biological incidents; catastrophic incidents; oil and hazardous material incidents;[34] and terrorism incidents, law enforcement, and investigation.[35] In one instance, as discussed below, the NRF annex concerning nuclear and radiological incidents provides that DOD will be responsible for coordinating aspects of the federal response to an accident or incident involving a nuclear weapon under DOD control.

DOD's unique capabilities include its ability to leverage the assistance of well-trained state National Guard assets to respond to a CBRNE event. For example, National Guard WMD civil support teams are trained, using federal funds (under Title 32), to perform consequence management missions and have the ability to deploy in response to domestic or manmade disasters that could result in catastrophic loss of life or property. [36]

Additionally, DOD's role in CBRNE CM activities takes on an especially unique role when the CBRNE event involves a nuclear or radiological asset under DOD control. As discussed more fully in the next section, in such circumstances DOD becomes the coordinating agency in accordance with the nuclear and radiological annex to the NRF.

f. Domestic Nuclear Weapons Accidents and Incidents

An exception to the general rule that DOD will only play a supporting role in the Federal response to a domestic CBRNE event arises when in some situations involving a nuclear weapon. **As specified in the Nuclear/Radiological Annex to the NRF, DOD is the coordinating agency for certain aspects of the Federal response when such weapons are under DOD control and are involved in an accident or**

incident.[37] Other agencies, such as the Department of Energy (DOE), the Environmental Protection Agency and, in some circumstances, the Department of Justice, will act as supporting agencies to the DOD response effort while also serving as the coordinating agency for specific areas related to the event (e.g., the FBI will coordinate the federal law enforcement efforts for terrorist-related events involving a nuclear weapon that was under DOD control).

Given DOD's responsibilities in this area, DOD appropriated funding, personnel, and equipment may be used to secure DOD controlled weapons material and equipment involved in an accident or incident, and to coordinate certain federal response actions regarding contamination, if any radioactive materials are released.[38] However, in the event that a weapon or equipment under the control of another federal agency is involved in an incident or accident, DOD will likely respond only after a request is made to provide support. If DOD is able to provide the requested assistance, DOD is typically reimbursed for any support costs beyond incremental costs under the Econmy Act.

Unique legal issues may arise in the event of a nuclear weapons accident or incident. For example, DOD response forces will generally want to establish a National Defense Area (NDA) under DODD 50 5200.8 and 50 USC 797 (the Internal Security Act). The NDA is used to establish a securityperimeter around the weapon and help prevent the spread of contamination. Questions concerning the NDA and related matters that may require input from the commander's legal advisor include: notice requirements apprising the public that an NDA has been established, the authority of FBI investigators to enter an NDA, and compensation for private land owners. The PCA and SRUF issues described would also likely apply.

In addition, environmental issues may require legal counsel. As noted in the Nuclear Radiological Incident Annex, provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[39] and the National Oil and Hazardous Substances Contingency Plan (NCP)[40] could impose various responsibilities on DOD response elements that are not typically encountered, even in other CBRNE CM situations. Legal advisors attached to military forces that have the mission of responding to nuclear

The response to an accident or incident involving a DOD-controlled nuclear weapon will raise unique legal questions.

weapons accidents and incidents should ensure they have received the latest training and the latest guidance on relevant legal authorities.[41]

IV. FOREIGN CONSEQUENCE MANAGEMENT

> Foreign Consequence Management. Assistance provided by the USG to a host nation (HN) to mitigate the effects of a deliberate or inadvertent CBRNE attack or event and to restore essential operations and service.[42]

By substituting USG for DOD and HN for state and local authorities, the DOD definitions for domestic CBRNE CM and FCM are quite similar. However, **there are fundamental differences between the policies, processes, and legal regimes that apply to domestic consequence management versus FCM. The foreign context also adds complexities**.[43] Indeed, nearly every legal consideration described in the domestic CM context takes on an additional layer of legal, political, and international significance in the FCM context. Enter the roles of the Department of State (DOS), the US Embassy (AMEMB) and the Chief of Mission (COM) in addressing host nation requests for assistance with CBRN events. Instead of operating among state and local authorities, if assisting off-installation, DOD most likely will be principally operating among HN authorities, as well as other multinational response forces (e.g., North Atlantic Treaty Organization (NATO), European Union Forces (EUFOR), World Health Organization, etc). DOD's presence in the HN and its activities inside/outside of DOD populated installations are always governed

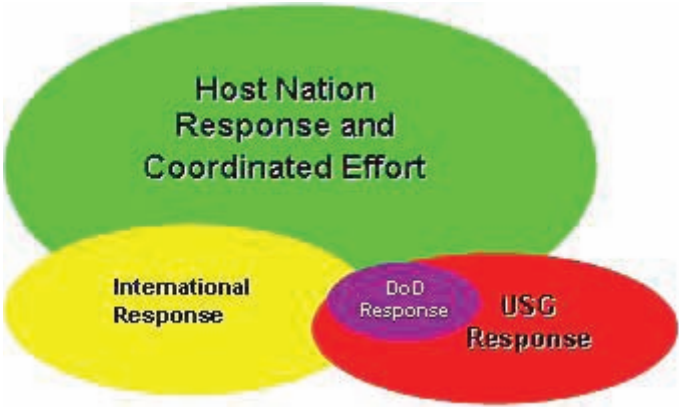
A foreign consequence management event can overwhelm the host nation's response capabilities.

by applicable Status of Forces Agreements (SOFA), basing agreements, transit agreements – as well as other specific agreements.[44]

As already mentioned, the NRF does not strictly apply to FCM situations. Instead of DHS, DOS will typically have the role of coordinating the US response.[45] When a significant FCM incident occurs, the host nation government most likely will determine whether internal resources are capable of managing the incident, and ascertain the types of specialized assistance that might be needed. Once those determinations are made:

> 1. The host nation may notify the local US Embassy and request help, or
> 2. It may directly notify the US State Department in Washington D.C., with a request for assistance,
> 3. DOS officials will coordinate a US interagency assessment of the HN request for assistance and the availability of federal capabilities, request DOD support from SECDEF, as required, and if approved, the most capable and available DOD elements may provide FCM support.
> 4. A HN request for FCM assistance that may be needed immediately to save lives could go directly to DOD forces in the vicinity. This immediate response situation is an exception to the general procedures set forth above and is discussed below. [46]

In a FCM situation, DOS is the lead agency (LA) for coordinating the US government response and DOD is a supporting agency, unless otherwise directed by the president. CBRNE incidents that occur on an installation are generally considered DOD's responsibility.[47] However, relevant HN agreements may require close coordination with HN authorities, and even access to DOD installations during a CBRNE event that occurs on or near an overseas DOD installation.[48]



DOD can play an important supporting role in the U.S. response to a foreign consequence management incident.

a. Immediate Response Authority

> The Secretary of Defense shall provide [disaster assistance outside the United States to respond to manmade or natural disasters] only: (a) at the discretion of the President; or (b) with the concurrence of the Secretary of State; or (c) in emergency situations in order save human lives, where there is not sufficient time to seek the prior initial concurrence of the Secretary of State, in which case the Secretary of Defense shall advise, and seek the concurrence of, the Secretary of State as soon as practicable thereafter.[49]

Overseas, local military commanders may, at the request of host nation authorities or the US COM, take immediate action to save lives in emergency situations or when an attack requires such immediate action, and when time does not permit prior approval from higher headquarters.[50] **Unlike the domestic context, immediate response actions to protect against significant property loss or personal injury are not authorized in FCM situations.** Similar to the domestic notification requirement, the relevant geographic combatant command is responsible for notifying the National Military Command Center (NMCC) and the COM once a local commander has responded to a request for assistance from HN authorities. Additional

support beyond what is necessary to save lives must be approved.

b. International Agreements/ Mutual Support Agreements

All DOD FCM activities must be performed consistent with applicable host nation agreements and SOFAs, where such agreements exist. This is a critical legal point to consider when conducting joint FCM planning. The nature and scope of HN agreements will vary greatly depending on the nation. Correspondingly, **the extent to which DOD can provide support overseas will in large part depend upon existing agreements.** For example, in areas where there is a heightened force protection or security risk, DOD's approval of a request to provide support might be conditioned on the ability of DOD personnel to carry weapons. SOFA agreements must be reviewed to ensure that DOD personnel are authorized to carry such weapons, that mission orders or other procedures are followed to comply with the authorization, and that the rules for the use of force or rules of engagement, as applicable, sufficiently protect DOD personnel from any HN liability. If no SOFA agreement is in place, military commanders should coordinate immediately with their legal advisors to identify other international agreements that may protect the responding military forces from criminal and civil liability, etc., and/or coordinate with the appropriate authorities to develop new arrangements with the HN.

At DOD installations overseas, just as with domestic installations, DOD emergency fire and response teams typically have local memorandums of agreement or mutual support agreements with HN emergency fire response teams.[51] Depending on the service, the authority to enter into these agreements generally rests with the installation commander.[52] However, it is important to emphasize that these agreements are limited to statutorily defined fire protection services in the vicinity of US installations overseas.[53] Additionally, the requirements for the authority to negotiate and conclude international agreements must always be observed.[54]

Other important FCM issues may also be addressed in applicable international agreements. For example, foreign claims and environmental liability may be an important DOD consideration before approving a certain level of FCM assistance in particular circumstances. If other foreign forces or multinational military organizations are providing assistance, there may be specific agreements and procedures that will apply to guide a coordinated response. All of these factors should be taken into careful consideration.

c. Economy Act/Acquisition and Cross-Servicing Agreements

In the event of a CBRN incident outside a US installation abroad, it is up to the host nation to request support from the COM or, in an immediate response scenario, from the nearest US installation commander. Depending on the level of support, the COM may request support from DOD. If approved, military units may assist the COM in providing support to the host nation. The responsible combatant command must capture all costs and assign a fund cite provided by DOS in accordance with the Economy Act.[55] In reality, other than specific funding sources, this concept is not much different from the interaction between DHS and USNORTHCOM in the domestic CM context.

In a FCM incident, funding under Title 22 of the US Code may be used by the State Department to assist HNs in all types of disasters. When the HN is lacking in a specific capability, DOS may request that DOD provide that capability. In most circumstances, DOD may not use its operating funds to provide such support, but may receive Title 22 funding from DOS to provide the requested support. Although an in depth funding discussion is beyond the scope of this article, it should be noted that in some circumstances and with DOS coordination, combatant commanders can use Title 10 funding for humanitarian and civil assistance, and other humanitarian relief purposes.[56] As envisaged in joint guidance, legal advisors and resource managers should coordinate at all planning levels to ensure that FCM and other related operations are aligned with proper funding mechanisms.[57]

At least with respect to military-to-military support, acquisition and cross-servicing agreements (ACSA) or mutual logistics support agreements provide a mechanism that allows US forces to provide logistics support in response to a variety of events.[58] For example, in a river flooding situation, a HN may be concerned that property damage will occur to such an extent that civilians will be displaced. The HN military forces may assist civilian authorities by stacking sandbags to limit the effects of flooding and ask a nearby US installation to provide any available sandbags.

Assuming, as appears to be the case on these basic facts, there is no immediate threat to loss of life, the

US commander does not have the authority to provide assistance under his immediate response authority. However, because the request is from a HN military official, it is possible that the commander could provide logistics support, such as sandbags, on a reimbursable basis to the HN military.[59] Similar support could just as easily be provided in a CBRN incident. Specific ACSA agreements will define the procedures and types of logistics support that can be exchanged on a reimbursable basis. Nevertheless, as the overall lead agency for foreign assistance, the US COM should always be kept well-informed when military assistance is provided in such circumstances. This will help avoid duplication of USG effort and allow the proper authorities to keep track of what type of US support is being provided to the HN.

d. Posse Comitatus

The Posse Comitatus Act does not have extraterritorial application.[60] However, **DOD policy prohibits US forces' participation in law enforcement activities overseas without the express approval of the SECDEF.**[61] As with the direct involvement of DOD forces in law enforcement measures in the US, direct US military involvement in HN affairs overseas generally, let alone in a law enforcement posture, may cause perception problems and in some cases would be inconsistent with existing SOFA provisions. Indeed, one could envision few circumstances where DOD forces would be needed to provide law enforcement support at a CBRN event overseas that was entirely divorced from force protection or security interests of DOD personnel in the relevant HN. At a minimum, the COM might identify potential problems before such a request reached DOD channels. Nevertheless, the PCA and the type of support requested must always be considered in domestic CM and FCM contexts.

e. Rules of Engagement/Rules for the Use of Force

In contrast to domestic CM missions, **DOD operations overseas will primarily involve application of the standing rules of engagement (ROE) rather than the standing rules for the use of force (SRUF) when conducting activities beyond ordinary force protection or security missions.**[62] Thus, commanders must consider the type of operational environment and apply the appropriate, combatant command-approved rules. Additionally, legal advisers play a critical role in identifying applicable international agreements or HN laws that may place further restrictions on the use of force that would generally not pertain to the application of rules of engagement. Joint planners should coordinate closely with their legal advisers when crafting mission-specific ROE/RUF, or when submitting requests for supplemental rules through the chain of command.

f. Concurrent Operations

In some instances a **foreign CBRN event that requires DOD assistance may also require DOD assistance for concurrent, incident-related operations such as foreign disaster relief (FDR) or non-combatant evacuation (NEO).** Joint planner coordination with their legal advisers concerning legal authorities, agreement provisions, proper funding sources, and operational considerations for these operations in conjunction with FCM operations can facilitate a more unified application of DOD forces and resources.

SUMMARY

The foregoing discussion provided a general outline of the most common legal issues associated with DOD domestic and foreign CBRNE consequence management activities. Depending on the circumstances, the scope and complexity of legal issues will vary greatly. In most circumstances, incorporation of legal considerations during the deliberate planning process will allow joint task force commanders to identify critical legal issues in the outset of an event, and gather any additional information or recommendations from the joint staff, which then enables the commander to make informed decisions and ensure an appropriate and effective DOD response. Legal advisors at all levels are encouraged to review the Legal Deskbooks for both domestic CBRNE CM and FCM developed by the Defense Threat Reduction Agency (DTRA) Office of the General Counsel for a more in depth analysis of legal issues and legal authorities associated with DCM and FCM.[63]

ABOUT THE AUTHORS:

G.R. (Rocky) Gillette is Associate General Counsel for Operational Law at the Defense Threat Reduction Agency, Washington, DC. Mr. Gillette holds a Bachelor of Science degree in Economics from California Polytechnic State University, a Juris Doctor from Tulane University, and attended the Georgetown University Law Center Masters in Laws in International and Comparative Law program. He is a Lieutenant Colonel (USAR) in the Army Judge Advocate General

Corps. After volunteering for active duty shortly after 11 September 2001, he served as the Deputy Staff Judge Advocate for Operational Law with First US Army, where he advised on legal questions relating to DOD support to civilian authorities and domestic consequence management issues, among other matters. He then assumed his present position at DTRA, where he is managing the update project for the Domestic WMD Incident Management Legal Deskbook. He also edited and managed publication of the Foreign Consequence Management Legal Deskbook. He provides legal advice on WMD matters, the DOD role in consequence management, DOD response to nuclear weapons accidents, and instructs on these subjects at the Defense Threat Reduction University and the National Defense University. He has served as the legal controller/observer for numerous domestic and foreign consequence management exercises.

Joseph ("Jay") Urgese is Associate General Counsel for Operational Law at the Defense Threat Reduction Agency (DTRA), Washington, DC. In that capacity, Mr. Urgese provides advice and training on legal issues relating to WMD response, domestic and foreign consequence management, nuclear weapons accidents, and defense support to civilian authorities, among other matters. A former active duty US Army Judge Advocate, Mr. Urgese served as Assistant Legal Advisor to the Commander, Stabilization Force, in Bosnia-Herzegovina. He also served as the principal legal advisor to a brigade combat team in Iraq (OIF-I). Among his responsibilities as the Deputy Chief of International Law and Operations at Headquarters, US Army Europe, Mr. Urgese provided advice on foreign consequence management and international agreements affecting DOD operations and missions. He is a Major in the US Army Reserves. Mr. Urgese received a BA in History from Furman University, his JD and an MBA from the University of Akron, and an LL.M in International and Comparative Law from the Georgetown University Law Center.

Endnotes:

[1] Department of Homeland Security, National Response Framework (January 2008), *available at* http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf [hereinafter NRF].

[2] The White House, Hurricane Katrina: Lessons Learned, Appendix A – Recommendations, Critical Challenges: National Preparedness, pp. 88-94 (February 2006), *available at* http://www.whitehouse.gov/reports/katrina-lessons-learned.pdf/appendix-a.html

[3] Department of Homeland Security - National Response Framework website, http://www.dhs.gov/xprepresp/committees/editorial_0566.shtm (last visited Aug. 19, 2008)

[4] *See* Emergency Management Assistance Compact (EMAC) of 1996, http://www.emacweb.org/ (last visited Aug. 19, 2008) and Joint Resolution Granting the Consent of Congress to the Emergency Management Assistance Compact, Pub. L. No. 104-321, 110 Stat. 3877 (Oct. 19, 1996). EMAC allows interstate agreements for assistance between member states when a Governor declares a disaster or emergency (currently all states, the District of Columbia, Puerto Rico ,and the Virgin Islands are members) (note that Congress was required to ratify the compact pursuant to Article I, Section 10 of the US Constitution.).

[5] *See* Office of the Assistance Secretary of Defense for Homeland Defense and America's Security Affairs, FAQs: Defense Support for Civil Authorities, http://www.defenselink.mil/policy/sections/policy_offices/hd/faqs/defenseSupport/index.html (last visited Aug. 19, 2008).

[6] NRF, *supra* note 1, at Page 1.

[7] Joint Pub. 3-27, Homeland Defense, 12 July 2007 (although beyond the scope of this article, DOD and principally USNORTHCOM has as its primary mission the defense of the US from external attacks).

[8] The NRF replaced the National Response Plan. One especially noteworthy difference in these two documents is that under the National Response Plan, the role of DHS in coordinating the federal response to a domestic disaster situation was often contingent upon whether such an event constituted an incident of national significance. The NRF no longer requires an incident of national significance to trigger DHS coordination of the federal response, and that term has been eliminated from the NRF.

[9] The Nuclear/Radiological Incident Annex to the NRF, pp. NUC-8, 9, 10. *Available at* http://www.fema.gov/pdf/emergency/nrf/nrf_nuclearradiologicalincidentannex.pdf

[10] Center for Law and Military Operations, Domestic Operational Law Handbook for Judge Advocates (2006) [hereinafter DOPLAW Handbook], p. 122.

[11] Deputy Secretary of Defense Memorandum, Implementation of the National Response Plan and the National Incident Management System, November 29, 2005.

[12] 42 USC §§ 5121-5206 (2006).

[13] "Background of Defense Support of Civil Authorities,"; http://www1.apan-info.net/Plans/BackgroundofDSCA/tabid/2953/Default.aspx (last visited Aug. 10, 2008).

[14] 50 USC § 2313 (2006).

[15] Joint Pub. 1-02, Department of Defense Dictionary of Military and Associated Terms, 12 April 2001, as amended through May 30, 2008; DODD 3025.1, Military Support to Civil Authorities, January 15, 1993. Current DoD guidance still refers to Defense Support to Civil Authorities (DSCA) as Military Support to Civil Authorities (MSCA). It appears that DoD may be moving toward using the former instead of the latter. The NRF uses DSCA, so that acronym is being used here. For the purposes of this Article, the terms MSCA and DSCA have identical meanings.

[16] Joint Pub. 1-02, *supra* note 15, at 150. Note that the definition provided for DSCA states: "Civil support provided under the auspices of the National Response Plan. Also called DSCA. (JP 3-28)." This definition has not been updated to reflect the issuance of the NRF.

[17] *See* CJCS Message, 282000z May 08, "DOD Support of Civil Authorities" (Standing DSCA EXORD), to Geographic Combatant Commanders (providing authorities for Combatant Commanders to conduct DSCA missions according to four categories), *available at* http://www.hqda.army.mil/ACSIM/fd/policy/fire/docs/CJCS% 20STANDING%20DSCA%20EXORD%20 highlighted.doc.

[18] DODD 3025.15, Military Assistance to Civil Authorities para 4.7.1, February 18, 1997, and Joint Pub. 3-28, Civil Support GL-9, 14 September 2007 (defines IRA as: "[a]ny form of immediate action taken to save lives, prevent human suffering, or mitigate great property damage under imminently serious conditions when time does not permit approval from a higher authority").

[19] Headquarters, Dept. of the Army, Field Manual 3-07, Stability Operations and Support Operations, p. 6-11, February, 2003.

[20] Joint Task Force for Civil Support, "Background of Defense Support for Civil Authorities, http://www1.apan-info.net/tabid/2953/Default.aspx (last visited Aug. 19, 2008).

[21] While DOD has, as a matter of policy only, adopted various hazmat exposure standards set out in the Occupational Safety and Health Act of 1970 (29 USC §§ 651-678) for uniformed service members and for routine peacetime "industrial-related" type activities, there is a clear exception under OSHA regulations for service members in general and for DOD operations that require actions "under emergency circumstances." 29 C.F.R. § 1960.2 (2007).

[22] DODI 6055.6, DOD Fire and Emergency Services Program, Administrative Reissuance Incorporating Change 1, November 4, 1996; DODI 2000.18**,** Department of Defense Installation Chemical, Biological, Radiological, Nuclear and High-Yield Explosive Emergency Response Guidelines, December 4, 2002.

[23] *See* 42 USC § 1856 (2006) (defines "fire protection" to include emergency services such as "basic medical support, basic and advanced life support, hazardous materials containment and confinement…").

[24] 18 U.S.C § 1385 (2007).

[25] The USCG is "otherwise authorized by law" to engage in law enforcement, pursuant to 14 USC § 89 and 46 USC § 70117, and is therefore not precluded from doing so by 10 USC § 375 even when assigned to the US Navy. *See also*, 14 USC § 1 (2007) (provides that the Coast Guard shall be a military service and a branch of the armed forces of the United States at all times, further reinforcing the continuation of its law enforcement authority regardless of agency affiliation). *And see* Jackson v. Alaska, 572 P.2d 87 (AK 1977).

[26] 10 USC § 382 (2007).

[27] CJCSI 3121.01B, Standing Rules of Engagement/Standing Rules for the Use of Force, 13 June 2005.

[28] DODD 5210.56, Use of Deadly Force and the Carrying of Firearms by DOD Personnel Engaged in Law Enforcement and Security Duties, November 1, 2001; *See also* CJCS Message, 282000z May 08, *supra* note 17, at para. 10.L.

[29] CJCSI 3121.02, Rules on the use of Force by DOD Personnel Providing Support to Law Enforcement Agencies Conducting Counterdrug Operations in the United States, 31 May 2000; CJCSI 3710.01A, DOD Counterdrug Support, 30 March 2004.

[30] MAJ Daniel Sennott, DA Pam 27-50-414, Interpreting Recent Changes to the Standing Rules for the Use of Force 52 (November 2007).

[31] CJCS Message, 282000z May08, *supra* note 17, at para. 10.L.1.

[32] Joint Pub. 3-41, Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Consequence Management II-7, 2 October 2006.

[33] FEMA, Federal Agencies Providing Disaster Assistance, https://fema.gov/government/business.shtm (last visited Aug. 19, 2008).

[34] NRF, *supra* note 1, at Incident Annexes and ESF #10, *available at* http://www.fema.gov/emergency/ nrf/incidentannexes.htm.

[35] Id.

[36] 32 USC §§ 901-908 (2006). In less severe circumstances, such as a hazardous material incident, the state governor can use the state's funds to employ the National Guard for assistance, potentially avoiding or minimizing the need for federal military support. Indeed, by statute the NG WMD Civil Support Teams may not be used for less severe hazmat incidents. Otherwise, the improper use of the NG could result in an Anti-deficiency Act violation.

[37] NRF, *supra* note 1, at Nuclear Radiological Incident Annex, pp. NUC-8, 9, 10.

[38] Id. at p. NUC-17, 23.

[39] 42 USC §§ 9601–9675 (2006).

[40] 40 C.F.R. § 300 (2007).

[41] The Defense Threat Reduction Agency's Defense Threat Reduction University offers training for commanders (and their staffs) of units that have this responsibility.

[42] DODI 2000.21, Foreign Consequence Management (FCM), March 10, 2006; CJCSI 3214.01C, Military Support to Foreign Consequence Management Operations for Chemical, Biological, Radiological, and Nuclear Incidents, 11 January 2008.

[43] One difference is that the DOD FCM response is not applicable to all hazards. Another is that the FCM objective of saving lives appears to more limited than the broader domestic CM goals of also protecting property and infrastructure. CJCSI 3214.01C, Military Support to Foreign Consequence Management Operations For Chemical, Biological, Radiological, and Nuclear Incidents, 11 January 2008. It should also be noted that the definition of FCM in CJCSI 3214.01C differs from DODDI 2000.21 in an important aspect – it does not include high-yield explosive incidents: "Foreign Consequence Management is defined as US Government activities to assist

friends and allies to assess and respond to a CBRN incident in order to mitigate human casualties and to provide temporary associated essential services." This appears to comport with the US State Department FCM definition (Department of State, Foreign Consequence Management Program website, http://www.state.gov/t/isn/c26799.htm (last visited Oct. 27, 2008)(" Foreign Consequence Management (FCM) covers the US efforts to assist partner nations in their preparation to recover and mitigate casualties from a terrorist attack using chemical, biological, radiological, or nuclear contaminants. It also includes the coordination of the US response to a request from a partner nation following a terrorist attack using chemical, biological, radiological, or nuclear contaminants."). As noted in that website, a draft annex to National Security Presidential Directive 17/Homeland Security Presidential Directive 4 (NSPD17/HSPD4), National Strategy to Combat Weapons of Mass Destruction, Dec. 11, 2002 (unclassified version available at http://www.fas.org/irp/offdocs/nspd/nspd-17.html), also excludes the "E" from FCM events. Accordingly, adoption of that annex would appear to mean that DOD would apply the CJCSI FCM definition.

[44] *See*, *e.g.*, United States European Command Status of Forces Policy (citing SECDEF and DOS policy on DOD operations in states with which the US does not have a SOFA agreement).

[45] See DoDI 6055.17, "DoD Installation Emergency Management (IEM) Program," January 13, 2009 (providing as DoD policy that "the guidelines set forth in [the NRF] will be implemented to the greatest extent possible at all U.S. installations outside the United States . . ."

[46] Exec. Order No. 12966, Foreign Disaster Assistance (, Jul. 14, 1995) (stating that the Secretary of Defense will only provide foreign disaster assistance: 1) at the direction of the President; 2) with the concurrence of the Secretary of State; or 3) in emergency situations in order to save lives)), and DODI 2000.21, *supra* note 42.

[47] DOS defines FCM to include on-installation CBRNE events. It is important to review applicable SOFA and international agreements to determine the legal requirements for allowing HN personnel at US installations overseas.

[48] Memorandum of Understanding Between the Ministry of Defense of the Republic of Italy and the Department of Defense of the United States of America Concerning Use of Installations/Infrastructure by US Forces in Italy, with annexes, Feb. 2, 1995, TIAS 12317 (Installation control with Italian Commander); Status of Forces in the Federal Republic of Germany, Art. 53-54, August 3, 1959, TIAS 5351, 14 UST 531, (requiring German emergency response access when there is a danger of any effects off of the US accommodation (installation)).

[49] Exec. Order No. 12966, *supra* note 44.

[50] CJCSI 3214.01C, *supra* note 43, at para. 6. *But see* DODI 2000.21, *supra* note 42 at E2.1.4., which defines FCM to include high-yield explosive events (the "E").

[51] *See* DODI 2000.18, DOD Installation CBRNE Emergency Response Guidelines para. E2.1.21, Dec. 4, 2002 (providing definition of a mutual aid agreement in the context of a CBRNE event).

[52] *See, e.g.*, Army Regulation (AR) 420-90, "Fire and Emergency Services," para. 2-5, March 15, 2005 (DRAFT).

[53] 42 USC §§ 1856, 1856a (2006).

[54] *See* DODD 5530.3, International Agreements para. 7.1, June 11, 1981, Change 1 February 18, 1991, certified current November 21, 2003 (providing that notwithstanding any other provision of law, the Case Act consultation with the SECSTATE is required prior to entering into any international agreement).

[55] DODI 4000.19, Interservice and Intragovernmental Support, Aug. 9, 1995 (incorporating requirements of the Economy Act, 31 USC §1535).

[56] *See, e.g.*, 10 USC § 166a (2007) (COCOM initiative funds); 10 USC §§ 401-407 (2007) (authorized funding for limited HCA provided in conjunction with military operations); 10 USC § 2557 (2007) (authorizes provision of DOD non-lethal excess supplies for humanitarian relief purposes); 10 USC § 2561(2007) (authorizes transportation of humanitarian relief).

[57] Joint Pub. 3-41, *supra* note 32, at IV.1. (b)(9).

[58] NATO Mutual Support Act, 10 USC §§ 2341-2350 (2007).

[59] *See* DODD 2010.9, Acquisition and Cross-Servicing Agreements, April 28, 2003, certified current as of November 24, 2003; CJCSI 2120.01, Acquisition and Cross-Servicing Agreements, 27 November 2006, directive current as of 17 December 2007 (providing definitions and guidance on authorized logistics support under an ACSA agreement).

[60] Memorandum, Office of Legal Counsel for General Brent Scowcroft, 3 November, 1989 (cited in US Army, The Judge Advocate General's Legal Center & School, International and Operational Law Department Operational Law Handbook, Aug., 2006, Chpt 19, pg 442, para. E.1).

[61] *See* DODD 5525.5, DOD Cooperation with Civilian Law Enforcement Officials, para. 8.2, Jan. 15, 1986.

[62] *See* CJCSI 3121.01B, *supra* note 27, at Enclosure L.

[63] The Domestic WMD Incident Management Legal Deskbook and the Foreign Consequence Management Legal Deskbook are both available online at http://www.dtra.mil/staffoffices/gc/index.cfm.

Essential Elements of Crisis Communications

Catharine Leahy
Allison Farabaugh

The Public Affairs Officer (PAO) of an installation should have a plan for crisis communications. This plan should be a blueprint for information dissemination and interactions with stakeholders. However, this plan should only be a preliminary plan. This article will provide tools for a robust crisis communication plan.

It was expected to be a quiet night watch in the garrison command post. That was until the first reports from the National Weather Service came into the watch team. A tornado warning had been issued for the immediate area surrounding the military facility. The watch team initiated the severe weather checklist that included all of the pre-planned elements necessary to protect life and property on the post. One of the most important items on the checklist was to contact the Public Affairs (PA) Office. How would the PA Office assist in the worst case (i.e., crisis) scenario? What had been prepared for situations like this? Who would be the base spokesperson? How would media issues be handled if necessary? All of these issues are elements of Crisis Communications.

> **In a crisis is cleverness born -** Chinese Proverb

Introduction

Marlin Fitzwater, the longest acting White House Press Secretary serving under Presidents Ronald Reagan and George H.W. Bush once said, "Good crisis communications is based on a system already in place. When there is a crisis you just tighten it up and make it better. If you routinely had a daily press briefing, you would tighten it up and make it three times a day. A crisis is no time to create a new system."[1]

During a crisis, the first messages to the public are most important and will have the highest impact. Initial messages carry the most weight and the first 30 seconds should be enough to gather the trust of an audience. First messages should be tailored to answer "who" is affected, "where" they are affected, and "what" affected them. Crisis communicators are challenged to answer questions while maintaining oversight on all other issues related to the crisis: on-going operations, victims, trust and credibility, behaviors, higher-level expectations, ethics, and lessons learned.[2]

In this paper we will outline and discuss seven essential strategies that Public Affairs Officers should consider in order to effectively communicate during a crisis situation: maintenance of constant situational awareness; truthfulness; acceptance of media interest; awareness of public needs and anxieties; assignment of credible leadership and sources to speak; compassion; and training preparation.

Essential Crisis Communication Tasks

Maintenance of Constant Situational Awareness:

> **When communicating, speed is critical; minutes and hours matter . . . tell the truth, stay in your lane and get the message out fast. Demand accuracy, adequate content, and proper characterization from the media. -** Multinational Corps – Iraq Counterinsurgency Guidance 2007

In the beginning stages of a crisis the process of acquiring intelligence and information about the event, about those affected, and what the response or recovery may entail are the first steps toward a return to normalcy. When asked for advice regarding a successful crisis communication plan, former White House Press Secretary, Ari Fleischer, said, "dig in deep, learn the facts, find out what the truth is, and share everything you can."[3] Early control of information will alleviate pressure and prevent the media from determining the story ahead of the PA team.

The public needs information in real time and communications professionals are challenged to set a high standard for information sharing. One way to maintain situational awareness is through a joint

information center (JIC). A JIC deconflicts, harmonizes, and fuses information. A JIC acts as a communication hub and brings different agencies together to work in a cohesive manner, which enables them to speak with one voice. The JIC is often led by the public information officer from the agency with the most direct responsibility over an incident response. This representative and his/her staff will be responsible for gathering incident data, analyzing public perceptions of the response, informing the public through the media, and then monitoring the media's follow-on reporting.

Truthfulness:

During a crisis, the most effective messages will be those that are clear, direct, and informative. Information should be promulgated immediately, with candor, by an individual with command or subject matter authority. On a military installation the commander or the most senior officer available should be prepared to be the spokesperson for any incident involving the installation, and most senior leaders have received training in media relations prior to assuming their command responsibilities. Consideration should be given to instituting a continuing training program for the commanders to assist them with the preparation for this media spotlight. It should be the responsibility of the PA staff to ensure that the commander has received accurate and comprehensive information about the incident and the response.

Acceptance of Media Interest:

The media will be a conduit for emergency information from official sources. During Hurricane Katrina, conflicting views of the situation in New Orleans emerged as statements from federal officials which contradicted the desperate picture painted by reporters on the streets.[4] Interaction with the media can be a PAOs biggest challenge. The media can be an ally for getting messages and guidance to the public quickly; however, it is likely that the media will run stories with or without assistance from communication professionals.

Public affairs officers should consider the impact of assisting the media representatives on all stories, positive and negative, to reaffirm and correctly represent strategic objectives and missions. Consider the fact that without information from a military spokesman the media may likely write, "officials would not respond to our questions" or "officials would not comment on this story"; these statements could not only fuel speculation and rumors, but also undermine all future communications between responders and the public.
The media has the ability to adapt quickly to gather up-to-the-minute information. Crisis communication lessons learned from the 2007 Virginia Tech University shootings indicate the media monitored blogs and reached out to bloggers for information. A blogger named "Bryce" began posting in the few hours immediately following the shooting. The Canadian

The speed of communications is wondrous to behold. It is also true that speed can multiply the distribution of information that we know to be untrue. - *Edward R. Murrow, CBS News, 1964 Speech*

Broadcasting Corporation and MTV contacted "Bryce" directly for interviews, and the NY Times posted inquiries on the blog. This was the first time traditional media sources used blogs as key sources and resources for information.[5] Non-traditional forms of media present challenges to successful crisis communication operations. Readily available information, via 24-hour news outlets, the Internet and cell phones, generate fragmented snapshots of an event. Communication professionals must remain proactive, counter false perceptions, and provide timely and accurate information to maintain public support in situations with significant media attention.

Communication professionals should determine a steady battle rhythm identifying times for information sharing and distribution. Communication decisions will be made with respect to higher headquarter battle rhythm milestones. Additionally, crisis communicators should consider mass media milestones such as evening and morning news broadcasts. Though it is difficult to ascertain the amount of information the media should have access to, daily briefings are an effective method for consistent and systematic information management.

Awareness of Public Needs and Anxieties:

Driven by fear alone, hordes of 'worried well' could overwhelm emergency rooms and clinics, impeding diagnosis and treatment of the genuinely ill.
- U.S. Representative Chris Shays (R-Conn)

Uncertainty and randomness of crisis situations will heighten the public's anxiety. When confronted by "fight or flight" moments of an emergency, more information will decrease people's fear. A restored sense of control will reduce the public's anxiety immediately following a crisis. In the days following the attacks on 11 September 2001, the American public watched 24-hour news coverage of relief efforts and searched for some way to help. Though it was not needed, many people organized blood drives or sought out places to donate blood. Seven years later, people paid remembrance to the day's events by donating blood.

The Center for Disease Control lays out three ways to reduce fear and anxiety:

- Symbolic gestures: candlelight vigils or moments of silence. In the aftermath of the Virginia Tech shootings, Virginia Tech administrators acted quickly to schedule a memorial convocation for parents, faculty, students, and concerned citizens the day after the event.[6]
- Preparatory behaviors: actions to prepare oneself. One example of preparatory behavior can be found in the National Strategy for Pandemic Influenza which lays out guidance to individuals on infection control behaviors and the specific actions they should take during a severe influenza season or pandemic, such as self-isolation and protection of others if they themselves contract the influenza.[7]
- Contingency measures: otherwise known as "if, then" measures. This could be direction to create a family emergency action plan.[8]

The public will want the single most important action for self-protection. Crisis communicators should prepare to respond with instructions like shelter-in-place, evacuate the area, or take preventative measures to thwart contagion. Micro issues should also be addressed. So called "in the weeds" questions are easy to address honestly with accurate information by subject matter experts well versed in the crisis at hand.

Assignment of Credible Leadership and Sources to Speak:

Visible top leadership during a crisis lends credibility to the response effort. The immediate dispatch of a qualified, responsible individual to the scene of the crisis will validate messages of concern and accountability. The affected public will want to see the individual answerable for response efforts, not the public affairs staff. Trusted subject matters experts, credible sources, and trusted communicators may also be called upon to speak. Credible spokespeople should responsibly manage information they know, provide all details available, remain within their area of expertise, and refrain from speculation.

Compassion:

During the 2003 blackouts in New York City (NYC), Mayor Bloomberg focused his press conferences on the effects of the crisis on the people of NYC. He expressed concern for people fainting from the heat as they walked home, for those trapped in subways and elevators, for those unable to leave the city. He spoke about community pride to prevent looting, and he commended the city's police and firefighters. Mayor Bloomberg effectively identified with the city's anxiety, acknowledged people's fear, and gave constructive guidance.[9]

Preparation:

Training for the worst-case is critical to crisis communication strategy. During Hurricane Katrina communication interoperability was weakened because of damaged critical infrastructure. Armed with generators and teams of reporters, the news media ran 24-hour operations. The state and federal governments worked to get situational awareness from news outlets – rather than being the source of information for the media. Communicators must invest time and resources in exercising capabilities in a multitude of contingency operations to determine their strengths and areas of improvement.[10]

Preparation is the only key. Exercise and drill. Mock worst-case scenarios. Anticipate what can go wrong, practice and drill. *- Ari Fleischer, interview*

Conclusion

Crisis communication and risk communication are terms often used interchangeably. Crisis communication deals with what just happened or is happening, whereas risk communication deals with something that could happen. Timely and accurate risk communication could reduce unwarranted fear in the population and possibly decrease demands on first responders which stem from psychosocial factors, such as, worried-well victims who seek treatment.

Communication Cycle

Communication professionals should prepare for all types of public reaction and use risk analysis as a platform for the development of a risk communication plan. Such actions should alleviate chaos in the event of a crisis. A robust plan for consequence management must include a communication component which will enable public affairs professionals the opportunity to perform their mission essential tasks.

Professional communicators must understand their primary mission – to inform the public of the current crisis, mitigate concern, promote safety, and support a return to normalcy. First messages and subsequent communication must address the aforementioned topics. The end of a crisis and return to normalcy is one step of the communications process, other steps include: assessment of the executed plan, review and analysis of the assessment, and implementation of observations/ lessons learned in an updated plan prepared for future incidents.

About the Authors

Catharine Leahy is currently employed by Cubic Applications Inc. as a member of the Chemical, Biological, Radiological, Nuclear, and High Explosive (CBRNE) Exercise Support Team to the Defense Threat Reduction Agency (DTRA), and is the lead analyst for exercises in the Pacific Command area of responsibility.

Allison Farabaugh is currently employed by Cubic Applications Inc. as a member of CBRNE Exercise Support Team to the Defense Threat Reduction Agency (DTRA) and is the strategic and crisis communications specialist for exercises in European Command, Pacific Command, and Northern Command areas of responsibility.

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Insights on Response and Decontamination

Thomas Evans, Ph.D.

Chemical, biological, and radiological agents make up the "working parts" of weapons of mass destruction (WMD). The challenges faced while responding to and decontaminating after the release of one of these agents into the environment varies, and are different for each type of agent. However, lessons learned from either the intentional or accidental release of these substances show that many considerations during remediation and response are universal. Quickly and accurately identifying the nature and area of the contaminant by establishing coordinated sampling and monitoring efforts, communicating information regarding the threat to all involved in response and decontamination efforts, informing the public regarding the threat and how they should respond, and relying on a vast array of experts working in concert are all critical to reducing the threat to public health and safety, as well as the cost of decontamination and remediation.

Introduction

While the United States (US) has been successful in its counterproliferation efforts for decades, many countries have increased attempts to acquire weapons of mass destruction, and many rogue states or terrorist organizations are working toward obtaining such capabilities. This means the US must confront a developing threat unlike any other in its history. Examining the immense subject of consequence management (CM) in response to the use of a WMD is daunting, and determining the tasks and issues associated with CM, as well as assessing adequacy and efficiency of response capabilities and procedures, can appear to be an intimidating challenge. The mission of CM is broad in its scope and implied responsibilities for the Department of Defense (DOD) and has resulted in policy-creation, planning, training, and exercising. Two of the most critical aspects of CM are response and decontamination. For the purpose of this article, decontamination (decon) is the process of neutralizing or removing chemical, biological, or radiological (CBR) agents from people, structures, articles and/or equipment, and the environment.[1]

Three events represent pinnacle case studies of response to and decontamination of CBR agents. Two of the case studies involve the intentional release of agent, while the third was the result of an accidental release and dispersal. The different contaminants (chemical, biological, and radiological) have vastly different properties, and considerations regarding response and decon varies considerably from one type of agent to the other. This article begins with brief descriptions of the CBR events, as well as a brief explanation of the threat posed by the respective agents. It then considers different aspects regarding response and decontamination, specifically the decontamination of people and structures (with some discussion of decon issues for objects inside structures). This will be done using specific examples from each event to illustrate some of the considerations and challenges that occur during response and decon. It is not the intent of the author to survey or even attempt to summarize the vast subject of CM here. The goal of this article is to use some of the aspects of these CBR-events to illustrate considerations that should be made while planning for, executing response, or decon. One thing that is common to all three events is the steep learning curve that resulted during the response. This should be expected with events that are "the first of their kind." However, it behooves all who are responsible for planning and responding to the use of weapons that utilize CBR to examine these types of case studies, so that the same lessons do not need to be learned the hard way again.

Chemical Event – Release of the chemical nerve agent Sarin into the Tokyo subway system.

Between 0730 and 0745 hrs on 20 March 1995, five people belonging to the cult Aum Shinrikyo (Aum Supreme Truth) boarded an inbound subway on one of three different subway lines – Hibiya, Chiyoda, and Maronouchi – at different stations, bound in a total of five different directions. Beginning at 0748, each cult member pierced one or more plastic bags filled with liquid sarin and then fled the subway. Shortly before 0800, the five trains converged on the Kasumigaseki station of the Tokyo subway system. Kasumigaseki is home to most of Tokyo's government offices and is considered to be the power center of the city. The attack left 12 dead, many hundreds injured, and thousands terrified.[2]

Sarin belongs to a class of manmade chemical agents known as nerve agents, because they interfere with the normal processes of the nervous system. Sarin, like most nerve agents, belongs to a group of chemicals known as organophosphates. It has the chemical symbol GB, because it belongs to a series of compounds that was discovered in Germany in the 1930's in the search for better pesticides. [3] It is a clear, colorless, odorless, and tasteless liquid when it's pure, and evaporates relative quickly into a gas at ambient temperatures.

Nerve agents are extremely toxic, and can cross most biological membranes (e.g., eyes, lining of the respiratory tract, lungs, lining of the digestive tract, skin) very quickly. Symptoms can appear within a few seconds after exposure to the vapor form of sarin, and within a few minutes up to 18 hours after exposure to the liquid form. It is toxic because it prevents the proper operation of the chemical that acts as the body's "off switch" for glands and muscles. Without this "off switch," the glands and muscles are constantly being stimulated. This results in a list of potential symptoms that include:

- Runny nose
- Watery eyes
- Small, pinpoint pupils
- Eye pain
- Blurred Vision
- Drooling and excessive sweating
- Cough
- Chest tightness
- Rapid breathing
- Confusion
- Drowniness
- Weakness
- Headache
- Nausea, vomiting and/or abdominal pain
- Coma
- Cessation of breathing

The most serious of these symptoms can result in death. [4]

Decontamination of People

Due to the rapid migration of sarin across biological membranes, decontamination of people most often is reduced to removing clothing to allow any remaining sarin that may be trapped against the skin to dissipate, and washing the skin with a diluted bleach solution or soap and water. Because the onset of physiological symptoms occurs so quickly, some of the most important aspects of response to a sarin-dispersal event are identifying the source of the symptoms, communication of this information up and down the chain of command, and medical surge capacity or the ability of the healthcare system to handle an influx of patients that exceeds the normal patient load.

The chronology of events during the release of sarin on the subway indicates that there was a significant delay in recognizing the nature of the event. This is not surprising given that this was the first time something like this had occurred. However, the ability to make a determination as to the presence and nature of a substance needs to be easily accessible early in the response. During the response effort, Japanese police recognized the need for a subject-matter expertise and contacted the Japanese Self Defense Force (JSDF) to send chemical warfare experts to assist operations units.[2] However, police and military authorities did not identify the agent as sarin for nearly two hours after the attack. *To provide effective decontamination and the ability to function in a contaminated environment, numerous organizations must be able to recognize and characterize the source of the contamination.* This provides, among other things, the ability to cross-check and validate, providing decision makers with information they can rely on as they direct response capabilities and resources.

Once determination that a threat exists and initial characterization is made, this information must be clearly and efficiently communicated to everyone involved in response efforts. Unfortunately, following the identification of the agent was made after the dispersal of sarin in Tokyo, this information was not shared with other response agencies for approximately one hour. In fact, this information was never officially passed to hospitals. It turned out that the determination that an agent was responsible for the event was made independently by a physician at St. Luke's International Hospital. This physician then called all the regional hospitals and faxed information on sarin to them.[5]

Surge capacity includes doctors, nurses, hospital staff, medications, physical space for patients, beds, equipment, and communications infrastructure. A critical consideration in surge capacity is the ability to triage and attend to patients vital needs at the incident site. This facilitates the efficient allocation of capabilities by determining which patients require immediate care. *However, effective surge capacity*

has the ability to "flex" at both the site and at secure health care facilities. In the case of the sarin attack in Tokyo, doctors, nurses, and clerks were assigned to the scene in response to requests from emergency response operations headquarters located at the affected subway stations. However, the rapid onset of symptoms resulting from sarin exposure meant that the establishment of response centers occurred after the most severely affected patients had been attended to. This resulted in supplemental medical personnel arriving on scene to find that patients in the most serious need of attention had already been transported to the hospital. [5] This is an example of the healthcare systems response "flexing" in the wrong direction.

The ability to transport patients to functioning medical facilities is an important aspect of response. By the end of the day of the sarin attack, 131 ambulances had transported 688 patients away from the scene and to hospitals near the scene. [5] The medical system and the ability to transport patients were overwhelmed. Hospitals further away from the event site offered to help the overcrowded hospitals, but they could not be fully used due to the lack of transportation. *Planning to respond to events like this must include the procedures for maximizing the efficient use of medical transport capabilities.*

Secondary contamination following a chemical agent attack can have a crippling effect to response efforts. This is a factor when the physiological effect of exposure to toxic chemicals is delayed for some period of time, or if the determination that a chemical agent is present takes time. This allows contamination to be spread unknowingly by those who were contaminated near the source. During the Tokyo sarin attack, the time it took to establish that a chemical agent was dispersed and inform all involved in response efforts significantly increased the amount of secondary contamination that occurred. *Decontaminating exposed victims is not just important to protect people at the incident scene, but also for medical transportation personnel, hospital workers, etc.* Due to the proximity of one of the effected subway lines to St. Luke's International Hospital, there was an almost simultaneous influx of first responder personnel and the involvement of hospital workers. Because no information was available for the first few hours after the attack that the incident was caused by a chemical nerve agent, patient decontamination was not initially attempted. Twenty-three percent of the 472 house staff at St. Luke's Hospital showed signs of sarin poisoning after they were exposed to contaminated patients.[6] After the staff learned that the victims were suffering from exposure to sarin, they decontaminated them by removing their clothing and having the victims shower. This process turned out to be time-intensive, due to the lack of adequate decontamination facilities and training, forcing the decontamination procedure to be rudimentary.[5]

Decontamination of Structures

In 1995, the only agency in Japan that possessed the ability to decontaminate an area exposed to a chemical or biological agent was a specialized task force of the Japanese Self-Defense Force. Between 1650 and 2120 hrs on the day of the attack – over eight hours after the sarin had been released – the task force decontaminated the subway cars with a diluted bleach solution. The JSDF did not assist in the decontamination of patients at hospitals.

Biological Event – Anthrax dispersal through the US mail system

Late in 2001, three terrorist attacks dispersed *Bacillus anthracis* (*B.a.*) spores via letters transmitted through the US mail system. [7] In the first attack, a letter mailed to media outlets in New York City entered the mail system in Trenton, NJ, on or about 18 September. In the second attack, a letter or package was sent in late September to American Media Incorporated (AMI) in Boca Rotan, FL. In a third attack, letters sent to US Senators Daschle and Leahy entered the mail system in Trenton, NJ, on or about 09 October. Twenty-two confirmed or suspected cases of anthrax infection resulted. Eleven of these were inhalational cases, of whom 5 died, while 11 of the cases were cutaneous (skin) (7 confirmed, 4 suspected). [8]

A number of sites were contaminated as a result of the attack, either directly or through secondary contamination. Among these were media offices, postal facilities, the Capital Hill anthrax site, and residences. The contaminated postal facilities included large Processing and Distribution Centers (P&DC). Examples include the Morgan P&DC in New York City, the Hamilton P&DC in Trenton, NJ, and the Brentwood P&DC in Washington, DC. Several smaller US Postal Service facilities also experienced contamination, as well as a number of federal government mail

facilities that handled contaminated mail after it left the Brentwood facility. *The secondary contamination that occurred in different P&DC sites indicates that threat posed by weaponized* B.a. *even when it's being transported in containers sealed for shipping.*

Anthrax is an acute infectious disease caused by spore-forming bacterium *B.a*. Anthrax most commonly occurs in wild and domestic lower vertebrates (cattle, sheep, goats, camels, antelopes, and other herbivores), but it can also occur in humans when they are exposed to infected animals or tissue from infected animals. Anthrax spores can survive in the soil for many years.

Anthrax infection can occur in three forms: cutaneous, inhalation, and gastrointestinal. Cutaneous anthrax is the most common naturally occurring form, with an estimated 2,000 cases reported annually worldwide.[9] Although gastrointestinal anthrax is uncommon, outbreaks are reported in Africa and Asia[9-11] following ingestion of insufficiently cooked contaminated meat. Inhalational anthrax is expected to account for most serious morbidity and most mortality following the use of *B.a.* as an aerosolized biological weapon. No naturally occurring case of inhalational anthrax has occurred in the United States since 1976, so a single case is now considered to be tied to an intentional anthrax release. Person-to-person transmission is extremely unlikely and has only been reported with cutaneous anthrax. Communicability is not a concern in managing or visiting with patients with inhalation anthrax. [12]

Decontamination of People

It is unlikely that a biological agent will first be detected at an incident scene, especially when a small amount of the material has been delivered in a covert way. Events involving biological agents will probably be detected based on the sequence and timing of events, common "syndromes," tests performed on victims who become ill and have time to seek medical care, and autopsy findings. There is currently no "quick and dirty" way to screen for a broad scope of biological agents or toxins at an incident scene, although this is an area of active research and development.[13]

For anyone who has potentially been exposed to inhalational anthrax, the Centers for Disease Control and Prevention (CDC) recommends 60 days of selected oral antibiotics in conjunction with a 3-dose regimen (0, 2 weeks, 4 weeks) of anthrax vaccine (BioThraxT, formerly known as AVA) as an emergency public health intervention.[14] When no information is available about the antimicrobial susceptibility of the implicated strain of *B.a.*, initial antibiotic therapy with ciprofloxacin or doxycycline is recommended.[14]

Decontamination of Structures

In 1999, the Working Group on Civilian Biodefense issued a consensus statement on anthrax as a biological weapon.[15] In it, it is reported that the "decontamination of large urban areas or even a building following exposure to an anthrax aerosol would be extremely difficult and is not indicated." Many factors contribute to this conclusion. For example, at the time of the anthrax release through the mail system in 2001, there was no chemical decon agent that had been registered specifically to kill *B.a.* spores. So, during the initial response, frequent requests were made for published materials about inactivating anthrax spores, but no adequate single source of literature on this subject was available. A number of manufacturers of equipment and materials reportedly capable of killing *B.a.* spores were available, but tests on equipment and materials were performed in laboratories using species other than *B.a.*, and the efficacy of some of the technologies relied on published literature.[16] As a result, organizations responsible for the cleanup of sites and chemical manufacturers had to submit crisis exemption requests to the US Environmental Protection Agency (EPA) that were supported by data on the expected efficacy and safety of the remediation process.

Often the question of, "how clean is clean?" is asked regarding biological agents such as *B.a. The criterion currently being used for judging the effectiveness of the overall remediation process for a site is zero growth of* B.a. *spores from all post-remediation environmental samples.* In the case of the anthrax attack of 2001, this applied to all sites regardless of whether the contamination occurred through a primary aerosolization event, such as the Dascshle suite or at the DOS mail facility, or as the result of secondary contamination.[17]

Fumigation of portions or all of the effected buildings was the method of decontamination that was selected, under the direction of the EPA. Details of the fumigation efforts have been well documented. [15] Each potential fumigating agent had advantages and disadvantages. These ranged from ease of generating the fumigant by heating inexpensive materials such as formaldehyde, to fumigants being acutely toxic, carcinogenic, or genotoxic (damaging to DNA).[18-20]

The selection of the fumigant for each facility resulted from consideration of many factors: historical effectiveness of the fumigating agent; its toxicity and environmental impact; ease and cost of generating the agent as a fumigant; penetrability of the fumigating agent into different materials; compatibility of the fumigating agent with the materials to be decontaminated (so the fumigating agent does not cause degradation of materials on contact); ease of post-fumigation aeration of the fumigant; and potential by-products from absorbing materials, nature of the site to be treated, cost, and time needed to complete removal of the fumigating agent during cleanup. No single fumigant will best meet all the requirements for decontamination. *Like so many issues that arise during response and decontamination, when selecting a fumigating agent, trade-offs need to be accepted to best optimize efforts and results.*

In the case of a bio-contaminant, environmental sampling is critical at a number of phases of the remediation process. Characterization sampling occurs after the presence of a contaminant is recognized, and identifies the nature and extent of the contamination. Later, sampling needs to occur to assess the usefulness of specific source reduction activities prior to implementing the main remediation. Ultimately, characterization sampling occurs again to evaluate whether the remediation has been effective and the site is ready for re-occupancy. Environmental sampling of bio-contaminants has evolved significantly as a discipline since the initial sampling events following the anthrax release in 2001, and it's clear that in-depth environmental sampling should be performed prior to any cleanup activities.[21] It's also important to point out that, for sites where primary aerosolization took place, aggressive air sampling should be part of the post-remediation environmental sampling strategy.

Radiological Event – Accidental release of Cesium-137 in Goiânia, Brazil

Sometime near the end of 1985, a private radiotherapy institute, the Instituto Goiano de Radioteriapia in Goiânia, Brazil, moved to a new location. During the move, the institute took a cobalt-60 teletherapy unit. It left in place a Cesium-137 (CS-137) teletherapy unit without notifying the licensing authority as required under the terms of the institute's license. Later, the premise that contained the abandoned Cs-137 unit was partially demolished, causing the teletherapy unit to be completely insecure. There are a number of different accounts of what followed. These accounts derive from several interviews with various individuals. In summary, two workers, thinking the unit would have value as scrap, removed the source assembly from the radiation head of the machine. Since there was no contamination found at the clinic, the source assembly of the unit was presumed to be intact at this stage of the event. However, from the moment the workers removed the components of the unit that contained the radioactive source, they would have been exposed to the direct beam, just as they would have been if the machine had been in the 'on' position. This exposure resulted in acute radiation sickness in the two men, which presented as dizziness, burns and swelling of exposed tissues, and vomiting within approximately 24-48 hours. These symptoms were misdiagnosed by a physician as an allergic reaction to something the men had eaten.

The men took the source assembly home and tried to dismantle it. In the attempt, the source capsule was ruptured. The radioactive source was in the form of cesium chloride salt, a substance that looks like light-blue table salt which has a slight, metallic shine. Like table salt, it is highly soluble and easily dispersible. It is important to note that a blue glow was observed emanating from cesium chloride, and the interest aroused by this significantly affected the course of the accident. But for this, and the solubility of cesium chloride, it is speculated that the accident would have resulted in little contamination and no serious injuries or deaths. However, serious contamination of the environment followed, including the external irradiation and internal contamination of several people. Thus began one of the most serious radiological accidents of all time.[22]

Cs-137 is the radioactive component of the cesium chloride that was dispersed during the accident. Cs-137 is one of the byproducts of nuclear fission in nuclear reactors. The radioactive decay process of Cs-137 produces both beta particles and gamma rays. As a result, Cs-137 is responsible for several types of physiological effects. Exposure to Cs-137 can increase the risk for cancer. Internal exposure to Cs-137, through ingestion and inhalation, allows the radioactive material to be distributed in the soft tissues, especially muscle tissue, exposing these tissues to the beta particles and gamma radiation. As a result of exposure to this material in Brazil, twenty people were

identified as needing medical attention. Four of these died within 4 weeks of their admission to the hospital.[22]

Decontamination of People

Approximately 24 hours after it was determined that radioactive material had been released into the environment, rumors spread in the local area about what had happened. The effect of the rumors was exacerbated the following morning when people awoke to find areas cordoned off with no coherent explanation. Local fire and civil defense forces had designated the nearby Olympic stadium as a staging area for isolating patients and screening for contamination. The number of people that arrived to be screened strained the limits of monitoring resources that were available. *Over 112,000 people were eventually screened for Cs-137 contamination. This event emphasizes the need for public health officials to communicate clearly and in a coordinated way to limit the potential impact the "worried well" may have on incident response.*

The Goiânia accident resulted in the highest levels of Cs-137 contamination clinically recorded. External contamination was observed in 249 people out of approximately 112,000 people monitored. Removal of externally deposited Cs-137 was successful in those individuals exhibiting little or no internal contamination. However, internal contamination in patients resulted in repeated recontamination of the skin due to sweating. *This point emphasizes the need for speedy and thorough external decontamination.* To treat internal contamination, Prussian Blue (Radiogardase^{R}) was administered to 46 people. The internally deposited Cs-137 presented a unique management problem, from both the medical and health physics point of view. Since there was no data in the literature relating to the administration of very high doses of Prussian Blue (doses deemed necessary due to the levels of internal contamination), the responding medical teams took special care at all times to ensure the early detection of any side-effects.[22]

The high levels of internally deposited Cs-137 presented some special medical problems in that all body fluids and excreta had to be collected and saved for analysis. Strict control measures for contamination and exposure had to be taken at all times over the three months for which the patients were in the hospital to prevent the patients from presenting a significant health risk to medical personnel.[22]

Decontamination of Structures

Decontamination of the structures and the items inside was undoubtedly the most resource intensive element of the response to the accident, with some 550 workers participating in Goiânia. During the initial phase, action had been taken to start a program of monitoring to determine whether radioactive contamination was being transported via various water-born routes, but particularly to ensure that no significant amounts were entering water supplies, however unlikely such an eventuality. In the case of the Goiânia event, the sampling network was not systematic but responded to requests from the local authorities and allegations from the general population. This turned out to be problematic, as monitoring resources were not being used efficiently. A sampling network was later planned and set up with the aim of evaluating all the environmental pathways. *Coordinating monitoring and sampling efforts is critical in order to maximize the efficient use of what can be limited resources.*

Not surprisingly, the site of the greatest contamination was the house where the source capsule had been opened. This was the last and most hazardous site to be decontaminated. Exposure rates were high, necessitating very short periods of work near the hottest spots. The work required careful planning. More than 90 percent of the most contaminated soil was on the surface. After demolition, rubble and soil were removed until the set criteria for decontamination were met. A concrete or clean soil pad was then deposited on the site.[22]

It took about 11 weeks of intensive work to survey and decontaminate the highly contaminated sites in the area, and a further three months to deal with the residual low levels of contamination. Surveys were conducted using both aerial and vehicle-mounted instruments, and these approaches were augmented by questioning patients in hospitals, as well as inhabitants of contaminated residences regarding visitors they may have had and about their own movements during the relevant period. *The importance of this questioning of affected people should not be underestimated, as it directs the monitoring resources and makes the most effective use of them.*

Significant contamination was found in 85 houses, and of those 41 were evacuated. Decontamination efforts were directed toward everything from the structural surfaces of the homes themselves to everything

inside. Major decontamination began with the demolition and removal of seven houses that were so contaminated that any decontamina-tion efforts were deemed unfeasible. Much of the soil from enclosed yards and gardens was also removed on the basis of soil profile measurements. It was determined that the contamination of roofs of houses that occurred due to atmospheric dispersion could significantly affect interior levels of radioactivity. However, attempts to decontaminate roofs using vacuum systems with high-efficiency filters were not very effective. The dose rates were only reduced by about 20 percent, and the roofs of two houses had to be removed.[22]

For objects inside structures, the decontamination techniques used depended on the objects in question. The decision whether to decontaminate or dispose of items depended on the ease of decontamination, except for items of special value such as jewelry or personal items of sentimental value. *An important and often overlooked point in the remediation efforts following an event like this was the psychological aspect of the image of toys, photographs, and other items of obvious sentimental value heaped in a yard for possible disposal.* Seeing this had a disturbing effect on residents and technicians.[22]

Since the response to the accident generated radioactive waste from its inception, the technical staff recognized very early on the need to designate a suitable site in Goiânia, or in the vicinity. On the basis of initial assessments of the probable volume of waste, and of likely transport problems, the technical staff determined that any delay in choosing a site would adversely affect decontamination efforts. While there were not technical difficulties in constructing a waste storage site, the choice of a site was delayed by political considerations. After discussions between technical advisors and federal and state officials, the political decision was made that a site would be found to store the waste for up to two years and that the selection of a permanent repository would be deferred until a later date. The site eventually chosen was in a sparsely populated area 20 km from Gioânia.

One of the initial concerns of officials regarding the dispersion of contaminant was the possibility that the Cs-137 had been dispersed by rainfall. It was initially thought that, because of the high rainfall, the contamination would have been either washed into the clay soil and retained, or had been drained off. This was not the case. The high temperatures dried out the ground and high winds caused resuspension and dispersion. The phrase that gets used often when considering decontamination of radioactive material is, "dilution is the solution," implying that adding water (e.g., rain) to a contaminated area and allowing the contaminant to run off into larger and larger bodies of water, dispersing along the way, is the best way to respond to a situation like this. Indeed, the scale of the resuspension and redispersion effect in Goiâna came as a surprise to those who worked to mitigate the effects of the accident. For example, some houses contamination deposited on the roof, where it turned out to be the major contributor to dose rates indoors, and the roof tiles had to be removed.[22]

Summary

Although the three case studies examined were unique in many ways; the material that posed the threat, the level of impact on the effected populations, means of decon of both victims and infrastructure, etc., many of the lessons learned from each event are similar. In each case, the ability to quickly and reliably determine the nature of the material posing the threat was important. However, in each case, the ability to clearly and accurately communicate the nature of the threat to all aspects of the response and to the general public was equally important. This does not just result in mitigating the impact on public health and safety. It also contributes to containing the spread of the contaminant, limiting the decontamination of areas and infrastructure that must be done following the release of a chemical, biological, or radiological material.

In each case, the ability to rely on a vast array of experts, all working together in a concerted effort to respond and decontaminate was important. The dynamic nature of these events, coupled with the fact that much was unknown about response and decontamination prior to the event, meant that consensus needed to be reached between members of a multidisciplinary team of technical experts, those responsible for public health and safety, and public representatives at all levels. In the US, the EPA continues to improve and enhance its ability to respond to and decon after the release of one of these WMDs. In particular, the emergency response experience that has been gained by the EPA as it has been called upon to clean up accidental releases, or perform time-critical removals of hazardous chemicals, has been significant. Relying on lessons learned and changes

made by the EPA will result in the saving of lives and dollars.

Environmental sampling is important throughout the environmental decon process, and advances in sampling technologies and approaches need to be incorporated during future response and decon events. Historical data for each site (e.g., determining the source of the chemical contaminant, following the mail trail to confirm the source of the anthrax contamination, and interviewing people who lived near the site of the Cs-137 release to determine which contaminated people went where) can be invaluable in focusing response and decon efforts to the places where they are needed most.

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About the Author

Dr. Thomas Evans is a Senior Principal Hardware Scientist for Cubic Applications, Inc. He has a PhD in Theoretical/Computational Chemistry from the University of Utah. He previously worked as a Research Scientist, and later, Senior Scientist, for Defense Group, Inc. and Battelle Memorial Institute in support of the Virtual Proving Ground at the US Army Proving Ground in Dugway, Utah.

Responding To A Radiological/Nuclear Accident/Incident - Biological Dosimetry Assessment Of Potential Victims

Major Ricardo Reyes, PhD
DTRA CM Assessment Team

ABSTRACT

This is an informational paper on the use of biological dosimetry for the assessment of dose of potential victims of radiation/nuclear exposure and/or contamination. It is an attempt to briefly address the planning for the use of biodosimeters, where to find the science behind it, and to provide information about key players in radiological emergency response. Biodosimetry is defined and the most common methods are listed with the intent to arm the user with the information needed to properly address the assessment of the radiation dose. This paper includes a one page "points-of-contact" list for assistance in the assessment of radiation dose in the event of a mass casualty involving a radiological or nuclear source. This contact list is strategically key to maintaining a high level of readiness that can save many lives both during the triage phase of an event and afterwards.

BIODOSIMETRY, THE PLANNING, THE SCIENCE, AND EMERGENCY CONTACTS

In the planning phase of consequence management (CM) for radiological or nuclear accidents or incidents, it is imperative to identify the proper handling of radiation exposure and/or contamination. Coupled with physical detection, dosimetry is a tool designed to assess the level of exposure and/or contamination to mass casualties, and plays a key role during the triage period and subsequent assessments. Biodosimetry can give us a more accurate assessment of the dose to individuals; therefore, it has a direct impact on the proper handling of each patient or victim.

Biodosimetry can be defined as the use of biological tissues in the prediction of radiological dose. It can be based on the changes in biological parameters, such as gene activation or chromosomal abnormalities, or on the physical changes of tissues, and can be detected by techniques such as luminescence or electron paramagnetic resonance (EPR). Biological dosimeters are potentially very sensitive, but may require time for the changes to occur via biological processing and may be affected by other perturbations associated with an acute event, including stress, wounds, and burns. Biophysical dosimeters are not subject to these limitations, but may not fully reflect the biological implications of the biologically based methods.

In response to the need for accurate and rapid biological dosimetry for assessing radiation dose and for viewing radiological terrorism as a real threat, the international scientific community responded by creating a biennial conference titled BIODOSE. This conference on radiation biodosimetry gathers scientists, medical providers, and government agencies involved in casualty management in an attempt to address ongoing efforts on the investigation and development of biological dosimeters.[1] In-depth discussions on the potential consequences to individual victims of radiation exposure leading to acute radiation syndrome, and the understanding of long term effects, led the four day conference held in the fall of 2008. In general, many scientific papers, posters, and projects on biodosimetry and leading edge technologies were presented. Extensively discussed characteristics of biodosimeters include: (1) capacity, (2) requirements for specially trained personnel, (3) field deployability, (4) interval before measurements can be made, (5) interval before results are available, (6) precision, (7) applicability to the population, (8) response to the energy of photons, (9) response to neutrons, (10) determination of dose distribution, and (11) variation in response among individuals.

In general, current biodosimetry methods for radiation incidents and accidents can be divided into three groups:

(1) Cytogenetics
    a. Dicentric assay
    b. Fluorescence in situ hybridization (FISH) assay
    c. Cytokinesis block micronucleus (CBMN) assay
    d. Premature chromosome condensation (PCC) assay

(2) Electron paramagnetic resonance (EPR, ESR[electron spin resonance])
    a. In vivo EPR measurements of teeth
    b. Measurements in fingernails (or toenails)
    c. Measurements in "biopsies" of teeth and bones
(3) Other approaches and technologies
    a. Clinical signs and symptoms
    b. Neutron activation
    c. Molecular markers in body fluids and tissues
    d. Luminescence
    e. Ultrasound
    f. Breath gas analysis
    g. Non-quantitative biodosimetry measurements

The applicability of a particular type of biodosimetry will depend on the characteristics of a particular event. It is unlikely that any single type of biodosimetry will be the method of choice for most situations. Some types may be used for particular situations and decisions on their use will be facilitated by knowledge of their detailed characteristics. The best approach is likely to be the use of more than one type of biodosimetry, integrating information that bears on the exposure doses of the particular event.

Regardless of which applicable method is used, having access to expert advice is key. The following organizations and web links offer the most up-to-date information with regards to the assessment of radiation dosimetry in response to a radiological or nuclear accident/incident. Among others, they offer specific information on the proper handling of radiological dispersal devices, radiological exposure devices, nuclear explosions, nuclear reactor accidents, and accidents involving the transportation of radioactive materials.

CONCLUSION

There are numerous ongoing international radiation dosimetry efforts in the scientific community, academia, and government agencies dealing with homeland security and terrorist response issues. The information can be overwhelming, especially in the event of an emergency. Therefore, it is recommended to have a plan for who to contact. During an emergency is not the time to look for the information about key players that have the capability to respond to radiological or nuclear accidents, and that can accurately perform radiation dose assessment. Having a one page "points-of-contacts" for assessing radiation dose in the event of a mass casualty involving a radiological or nuclear source is crucial to preparedness that can save many lives during the triage phase and later. Since the information may change with time, it is strongly advised to ensure this one page reference is updated often. The support that can be obtained from the agencies listed will arm us with the tools needed for promptly addressing radiological terrorism.

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About the Author:

Major Ricardo Reyes is an active duty nuclear medical science officer in the US Army. He holds a degree in Nuclear Engineering and a Masters degree in Nuclear Engineering Sciences from the University of Florida, and a Ph.D. from the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland. His dissertation research on Electron Paramagnetic Resonance involved the investigation of the use of human fingernails as potential biophysical markers of radiation exposure. Major Reyes' assignments include the US Army Center for Health Promotion and Preventive Medicine; the 520th Theater Medical Command, Landstuhl Regional Medical Center; the 44th Medical Command, USUHS; and, most recently, the Defense Threat Reduction Agency (DTRA). At DTRA, Reyes works for the consequence management assessment team as an operations officer. He is a member of the Health Physics Society, the American Association for Physicists in Medicine, the American Nuclear Society, and the American College of Radiology. He currently resides in Maryland with his wife and two daughters.

Federal/State/Local Emergency Contacts (Nuclear/Radiological)

US Department of Health and Human Services, Radiation Event Medical Management
http://www.remm.nlm.gov/ars_wbd.htm#rx

Armed Forces Radiobiology Research Institute (AFRRI), Bethesda, MD
Office of the Director (301) 295-1210
Military Medical Operations (301) 295-0316
Emergency (24 hours) (301) 295-0530
Medical Radiobiology Advisory Team http://www.afrri.usuhs.mil/outreach/meir/mrat.htm

Radiation Emergency Assistance Center/Training Site (REAC/TS), Oak Ridge, TN
Emergency: DOE/Oak Ridge Office (865)-576-1005
(ask for REAC/TS) This is also the after hours number
At other times (865)-576-3131 (between 8:30-4:30 CST)

Centers for Disease Control and Prevention (CDC), Atlanta, GA
General contact (800)-CDC-INFO (800) 232-4636
Emergency Response (770)-488-7100

Nuclear Regulatory Commission (NRC)
General contact (800) 368-5642
Emergency (301) 816-5100 (24-hr)

Federal Emergency Management Agency (FEMA)
General contact (800) 621-FEMA (3362) (800) 462-7585 (TTY)

Conference of Radiation Control Program Directors (CRCPD) http://www.crcpd.org/default.asp
State phone number http://www.crcpd.org/Map/map.asp#map

Food and Drug Administration (FDA)
Emergency Operations (301) 443-1240 (24-hr)
Field Office: http://www.fda.gov/ora/inspect_ref/iom/iomoradir.html

Department of Energy, National Nuclear Security Administration's Radiation Assistance Program (RAP)
Headquarter, Washington, DC (202) 586-8100
Regional office (24-hr)

Environmental Protection Agency (EPA)
National Response Center (800)-424-8802
Regional office

Federal Bureau of Investigation (FBI)
Headquarter, Washington, DC (202)-324-3000
Local field office

Your Law Enforcement, Fire, Hazmat (Local police, County police, State police, Hazmat Fire department)
Your Emergency Management Operations Center (City , County, State)

Decontamination Operations in a Mass Casualty Scenario: A synopsis of observations from Ardent Sentry 2007 Exercise

Michael L. Snyder
Thomas J. Sobieski

Introduction

The Ardent Sentry 2007 (AS07) full-scale exercise was a Chairman Joint Chiefs of Staff (CJCS) designated, US NORTHERN COMMAND (USNORTHCOM) sponsored, US Joint Forces Command (USJFCOM) supported exercise. Based on Department of Homeland Security (DHS) National Planning Scenario #1 (Nuclear Detonation—10 Kiloton Improvised Nuclear Device), AS07 was conducted on 10-17 May 2007. The scenario included a simulated detonation of a nuclear device (NUDET) near Lawrence, IN (NE of Indianapolis) by a terrorist group. Based on a surface burst, 2000 census data, and scripted weather, the scenario involved 15,000 dead and 21,000 injured. Responders to this catastrophic event included local, state, and federal governments. Among the most challenging tasks was the need to quickly and completely decontaminate large numbers of the population. The Department of Defense (DOD) is capable of conducting mass decontamination in a Defense Support of Civil Authorities (DSCA) environment. However, effective employment requires an understanding of the unique circumstances of a homeland event, and the doctrinal differences between battlefield decontamination operations and DSCA.

This article is sponsored by the Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense (JRO CBRND). The JRO-CBRND is the single office within the DOD under the Chairman of the Joint Chiefs of Staff to be responsible for the planning, coordination, and approval of joint chemical, biological, radiological, and nuclear (CBRN) defense operational requirements, medical and non-medical, and to serve as the focal point for service, combatant command, and joint staff requirements generation. These responsibilities include development of CBRN defense operational requirements, joint operational concepts and architectures for passive defense, consequence management, force protection, and homeland security.

The Impact of DSCA on Decontamination Tasks

Development of the AS07 scenario in conjunction with representatives from the Indiana Department of Homeland Security Training Division and the City of Indianapolis Department of Public Safety revealed that decontamination efforts in the DSCA environment require special considerations by military CBRN planners in the following areas:

- Pre- 11 September 2001 (9/11) focus on hazardous material spills demonstrated a very capable and thorough decontamination process. However, process was equipment and manpower intensive with limited (50-100 persons/hr). Since 9/11, civilian first responders developed methods to increase their mass decontamination capability (Emergency Decontamination Corridor System (EDCS) and the Ladder Pipe Decontamination System (LDS), as outlined in the Army Soldier and Biological Chemical Command (SBCCOM) and the Chemical, Biological, Radiological, and Nuclear Defense Information Analysis Center (CBRNIAC) publications).

- Determining who needs to be decontaminated: Modeling estimated a total of 21,000 citizens were within the evacuation zone based on radioactive fallout. Not all will be contaminated. Some citizens may evacuate immediately while others may shelter in place for hours to days. Identifying those who are "clean" will greatly reduce the resources needed and expended.

- Multi–site operations: Several mass decontamination sites will likely be established around the plume perimeter to meet the need. The DOD is not responsible for the operations of the multiple sites, but it may need to support, relieve, or take over full operation of a particular site.

- Integrating decontamination operations with other plans: Decontamination operations must be integrated into the whole mitigation/recovery process. This would include initial medical triage, follow on medical care, and subsequent transport, clothing, feeding, and sheltering for all of those presented for decontamination.

- Containment of runoff: Conventional decontamination operations will contain runoff to prevent contamination of the environment. Mass decontamination generates significant volume of runoff. Issues revolve around the type of contaminant feasible and remediation coordination with the proper environmental agencies.

- Personal effects: Mass decontaminate will yield large amounts of personal effects. The legal disposition of personal effects will need to be addressed as well as protocols for the screening/disposition of vehicles.

- Accountability: Accurate and early recovery of self evacuated, and tracking of all other affected/displaced/killed/injured people is a major concern. A NUDET scenario will displace large numbers of residents who will be in evacuation, decontamination, transport, and follow up medical care streams.

- Crowd control: Effective mass decontamination operations will require crowd control. Local law enforcement and public affairs are key players. Even though US Code Title 10 forces are prevented from performing law enforcement duties in accordance with the Posse Comitatus Act, they need to plan for civil unrest at decontamination sites.

Sources of best practices to amplify and support these considerations include the Department of Defense Joint Lessons Learned Information System (www.jllis.mil) and the Department of Homeland Security (DHS) Lessons Learned Information Sharing website (www.LLIS.gov). A particular entry on the DHS webpage, entitled: "Radiological Dispersal Device Incident Response Planning: Decontamination," provides some insights into the topical discussions presented here.

Summary

The procedures and capabilities to expediently conduct mass decontamination have undergone dramatic changes in recent years. Although DOD is not the lead agency responsible for coordinating the overall decontamination effort in a catastrophic scenario such as a NUDET, the DOD will most likely be called upon to establish their own mass decontamination site(s), or to augment existing operations that were previously established by local and state first responders. This creates the need to:

- Understand the operational employment concepts and become familiar with the equipment and procedures that may be employed by civilian first responders for mass decontamination.

- Perform periodic review of mass decontamination plans with special consideration of the aforementioned areas, which allows planners to incorporate new policies, procedures, and equipment.

For further information, the authors may be contacted at SnyderM@Battelle.org and Thomas.sobieski.CTR@jfcom.mil

About the Authors:

Mike Snyder retired from the US Army with after 31 years of service. Formerly a trainer/curriculum developer for the Center for Domestic Preparedness (DHS), and the Operations Planning Group Chief for Joint Task Force-Civil Support; he is currently a Homeland Security Advisor with Battelle Memorial Institute. In the latter capacity, past and present clients and jurisdictions have included DOD, DHS, and the states/territories of Alaska, Guam, Alabama, Michigan, Indiana, Virginia, Maine, and Washington.

Thomas J. Sobieski (Battelle Memorial Institute) provides contract support to the Joint Staff, J8, Joint Requirements Office for Chemical, Biological, Radiological, Nuclear Defense (JRO-CBRND). For Ardent Sentry 2007, he led a team of six subject matter experts (SME) that supported USNORTHCOM and the USJFCOM Joint Warfighting Center (JWFC) in the scenario development, planning, execution, and observation of AS07. Mr. Sobieski has served previously the Deputy Director for Training and Exercises, Joint Task Force-Civil Support and is also an Air Force Reserve civil engineer officer with assignments that included squadron command, executive officer, and readiness officer at installation and command level. He holds a BS Electrical Engineering, Lehigh University 1984, and a MS Engineering Management, University of Alaska, 1992. Contact Information: 113 Blackberry Bend, Yorktown VA 23693. Office phone: 757-203-7863.

Consequence Management - What Do We Do With The Contaminated Dead?

Dr. John Jacocks
Capt Ryan Danley
Mrs. Lee C. Green
Ms. Gavin

> "Show me the manner in which a nation cares for its dead, and I will measure with mathematical exactness, the tender mercies of its people, their loyalty to high ideals, and their regard for the laws of the land." --William Ewart Gladstone, British Prime Minister

Nuclear detonation: Photo of nuclear weapon test at Nevada Test Site, circa 1955. Source: AFRRI files.

ABSTRACT

This article is focused on the difficult milieu planners will find themselves in following the deployment of a weapon of mass destruction (WMD). First, the issues associated with search and recovery, and then decontamination of remains in various WMD situations are explored. Then, again in various WMD situations, issues of storage/temporary interment, as well as final disposition arrangements are addressed. This article aims to help alleviate some of the worries and dreads associated with handling contaminated remains in a military theater of operation.

Have you ever been at the blessed end of exercise (ENDEX), after a tough, realistic (WMD) exercise, one where you were secretly glad things had not gone perfectly, because you really like exercises to show areas of weakness, so the unit can improve and better prepare, when the usual (although always embarrassing) question gets reluctantly asked, "Oh yeah, what do we do with the fatalities?" It is a very difficult situation. No command likes to dwell on its fatalities. Likewise, no command likes to be unprepared. About the only way to make a situation with fatalities worse, is to have no plans to deal with the fatalities. The way decedents are treated has lasting effects on survivors, families, and communities. Most importantly, though, proper performance of mortuary affairs (MA) tasks will provide peace of mind to families that their loved ones were properly cared for, positively identified, and provided the dignity, reverence, and respect the Department of Defense (DOD) mandates. Planners who include robust mortuary affairs coordination help insure their operation's success and contribute to the community's ability to recover from the devastation, as loved ones can move into their future once decedent identification is made and subsequent insurance and inheritance issues are resolved.

The discussion of contaminated remains processing as relates to WMD events is framed in regards to the number of dead. While WMD actions on a civilian population can result in significant numbers of fatalities, DOD casualties are estimated to be significantly lower, with numbers in the low double digits for most WMD scenarios. DOD personnel are trained, have personal protective equipment (PPE), and are informed as to potential threats. For joint planners, however, any WMD event poses complex challenges which are mitigated by detailed, coordinated plans. A key component of success will be incorporating clear roles and responsibilities into the plans, as well as a realistic timeline. Also challenging is the current lack of clear guidelines and DOD or national

standards for decontamination of chemical and biologically contaminated remains. Planners must understand that regardless of whether remains can be decontaminated to a "safe" level, remains must be processed through a mortuary affairs decontamination and collection point (MADCP) operation. The MADCP operation allows mortuary affairs specialists to safely perform the mortuary affairs mission of documenting information about the remains and obtaining dioxyribonucleic acid (DNA) samples both of which will aid in the positive identification process. Performing the mortuary affairs tasks as soon as possible is critical to ensure the eventual positive identification of all remains. All parties, military and civilian, will have to be understanding as a limited number of mortuary affairs personnel deals with a seemingly unlimited number of remains. The patience displayed dealing with the fatalities in New York City after the events of 11 September 2001, or in the Gulf Coast after Hurricane Katrina made landfall on 29 August 2005, will need to be magnified in direct proportion to the calamity.

S&R Team: Photo of emergency response team drill. Source: Guidelines for Handling Decedents Contaminated with Radioactive Materials, CDC, 2007.

Search and Recovery (S&R) of Contaminated Remains

Under DOD doctrine, S&R is a unit mission. However, units who are involved in a WMD event may request assistance from their higher headquarters. MA assets are very scarce in the force structure and their mission is to operate theater evacuation points and collection points for both "regular" remains, as well as contaminated remains.

Chemical/Biological Scenario

The special precautions needed to deal with S&R of chemical/biological contaminated remains include a spectrum of personal protective equipment (PPE) that will be situation dependent. The nature of the event will impact how much of a persistent threat there is to S&R personnel. Any situation that limits air circulation and sunlight exposure could create conditions with increased risks of harbored agent. Detection capability or teams will need to be available to insure safety of S&R personnel.

Radiological/Nuclear Scenario

In the case of an incident involving radiological or nuclear contaminated remains, personnel protection needs go to beyond the respiratory, ocular, and dermal protection afforded by most personal protective equipment (PPE). Consideration must be given to the radiation dose the S&R personnel would receive. Assessments should be made of the risk of handling radiological contaminated remains and operating in the surrounding area. In order to measure the radiation dose, S&R personnel should be assigned dosimeters if operating in a known radiological or nuclear contaminated environment. If dosimeters are not available, other radiation detectors may be used to determine the dose. Dose limits should be set prior to the onset of S&R efforts by the operational commander. This maximum dose limit is called a radiological exposure state (RES). The commander will develop the RES in consultation with the staff medical doctor, radiation safety officer (RSO), and/or health physicist. When possible, dose limits should conform to the

more restrictive annual occupational dose limits developed by the Nuclear Regulatory Commission (NRC). To reduce the dose, personnel should minimize the time spent handling, and increase their distance from, radiological or nuclear contaminated remains. No personnel should be subjected to a harmful radiation dose during recovery efforts.

Decontamination

The guidelines below for general decontamination of remains are not exhaustive. CBRN (Chemical, Biological, Radiological, and Nuclear) experts will certainly play a role in adapting to any given scenario.

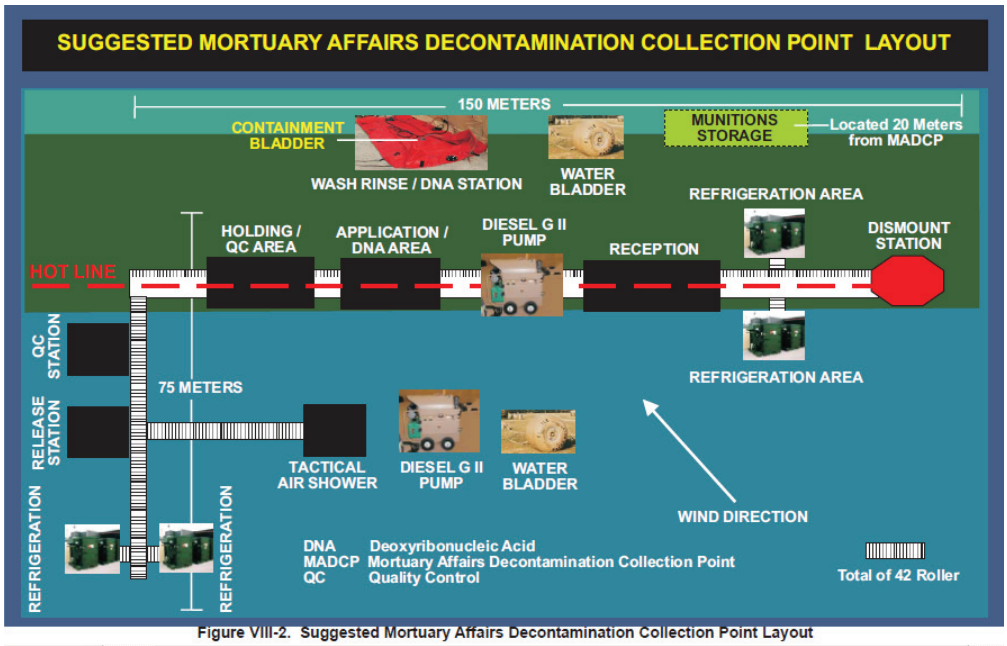


Figure VIII-2. Suggested Mortuary Affairs Decontamination Collection Point Layout

Collection Point Layout: Suggested Mortuary Affairs Decontamination Collection Layout. Source: Mortuary Affairs in Joint Operations, Joint Publications 4-06, 5 June 2006

Chemical/Biological Scenario

Chemically contaminated remains will pose the most complicated decontamination scenarios. MADCP operations follow a detailed sequence of steps to respectfully and safely prepare remains. The MADCP teams will require intense logistical and life support, as well as support from CBRN and medical experts. While specific details of the chemical decontamination of remains may be agent specific, generic decontamination procedures as outlined in Joint Publication (JP) 4-06, *Mortuary Affairs in Joint Operations*, dated 5 June 2006, will reduce the hazard of most remains for processing and repatriation. Planners will want to be able to reach MADCP assets in other commands if high casualty numbers overwhelm the initial response force's capability.

Biologically contaminated remains will likely be similarly burdensome, due to the inaccurately perceived specter of persistence of biologic agents. Following the same PPE guidelines as when dealing with chemical contamination will keep personnel safe. Altering the pH of the decontaminating solution will effectively neutralize surface biologic agents. Most infectious organisms do not survive beyond 48 hours in a dead body. The embalming process would complete the decontamination process. However, survivability of all potential pathogens in corpses has not been studied. In the case of death due to any agent listed in the Code of Federal Regulations Title 42, Chapter 1, 71.32(b) (cholera, infectious tuberculosis, plague, smallpox, yellow fever, or viral hemorrhagic fevers), the remains must be cleared by the Centers for Disease Control (CDC) Biosafety Branch, Office of Health and Safety. The CDC emergency reporting phone number for government officials or health care workers is 770-488-7100.

Radiological/Nuclear Scenario

Radiologically contaminated remains pose some unique problems for decontamination. First, it is important to note that there is no way to neutralize radiological material or contamination from it. Thus, all radiologically contaminated remains that were successfully decontaminated

indicate something else was contaminated (e.g., rinse water). The MADCP equipment, however, includes the containment of all wastewater. Planners must deal with coordinating and planning for the removal of that wastewater. Remains that can be decontaminated to a level below field detection can be subsequently handled and transported as "normal" remains. Second, the activity of radiological contamination will decrease in accordance with the decay rate(s) of the radiological material(s) involved. Finally, it may be impractical, or impossible, to decontaminate remains with internal radiological contamination. Because of these technical realities, according to JP 4-06, "no effort will be made to decontaminate radiologically contaminated human remains until CBRN personnel determine the appropriate level of protection that is needed, the level of radioactivity, and that it is safe to enter and work in the area." Detailed radiation surveys of the MADCP sites, the surrounding vicinity, and all contaminated human remains are required. Remains which have radioactive embedded shrapnel will not be able to be rendered completely safe. Planners will need to coordinate with transportation authorities to determine if these remains can be transported safely using standard protection procedures. A decontamination process will be completed for all radioactive remains in order to reduce the hazard and mitigate risk. If decontamination is not, or can not, be performed, temporary interment should be considered as a method to ensure personnel safety and allow for the natural decay of the radioactive source.

Storage/Temporary Interment

Chemical/Biological Scenario

Once properly decontaminated, chemically or biologically contaminated remains do not require special storage measures. As per all situations, temporary internment is a choice of last resort. It should be exercised based on the services' inability to preserve and evacuate human remains out of theater.

According to JP 4-06, three decontamination attempts are considered a complete decontamination effort for CBRN contaminated human remains. If, after three attempts at decontamination of chemically contaminated remains, the remains are still contaminated, or there is suspected gross contamination with a persistent biological agent, temporary interment can be considered as a measure to help mitigate the risk of future spread of agent by lowering or eliminating agent via the passage of time. Chemical and biologic agent half lives will determine the feasibility of this course of action. If temporary interment is not an option due to political or military reasons, remains may also be temporarily stored pending return to the US. Planners must obtain cool storage assets, such as refrigerator vans, capable of storing remains at the optimal temperature of 34-37 degrees Fahrenheit to delay decomposition. Remains that have residual chemical or biological contamination must be temporarily stored in a secure location, with proper chemical/biological monitoring procedures and security to prevent unauthorized access. Chemical/biological, medical, and safety experts will need to assist in preparing the temporary interment plan and the safety plan for the specific site, to include addressing what level of protection is required, what kind of monitoring must be done, and to ensure the site is properly marked and controlled for the specific threat. The US Army is currently developing capabilities to return CBRN contaminated remains to the US, but until then, temporary storage or interment options must be considered.

Radiological/Nuclear Scenario

If, after three attempts at decontamination of radiologically contaminated remains, the human remains still register contamination, they will be segregated from other human remains and technical experts will be consulted. Best efforts should be made to complete the decontamination to be able to release the remains to the person authorized to direct disposition of remains (PADD). If no resolution is reached, human remains may be temporarily interred in theater with the geographic combatant commander's concurrence. If the half-life(s) of the radioactive material(s) involved

is sufficiently short, interment may provide the simplest method of reducing or eliminating the radiation risk to personnel. As a rule of thumb, less then one percent of a radionuclide original activity will remain after seven half-lives. For short-lived radionuclides with half lives less than 100 days, the required temporary interment time could range from days to several months.

Transportation of Contaminated Remains

It is US Transportation Command (USTRANSCOM) policy that CBRN contaminated causalities will NOT enter the Defense Transportation System prior to decontamination. If the remains are decontaminated, they are no longer considered to be contaminated remains and will be transported through normal channels. In the case that the remains can not be decontaminated, temporary interment is the recommended method for disposition. If an exception to this policy is approved, safe handling procedures and materials need to be identified on a case by case basis prior to the transport of contaminated remains. A few of these considerations are outlined below.

Chemical/Biological Scenario

If remains are suspected of having biologic contamination and must be moved in theater, they must be placed in two human remains pouches (HRP) and marked "BIO." Full processing must be completed at the MADCP. If transportation is authorized, the remains must be transported using approved transportation procedures in a "hermetically" sealed container to eliminate the possibility of public harm.

Radiological/Nuclear

Similarly, if remains that have radiological contamination must be moved, the remains must be placed in two HRPs and marked "NUCLEAR." The US Department of Transportation regulates the shipment of radioactive material. Under normal conditions, the placard would include information about the radionuclide(s), the activity, and dose rate outside the container. However, federal regulations do not exist that specifically address transportation of radiologically contaminated remains. It may not be possible to fully identify the radionuclide(s), nor to quantify the activity of contamination. Still, a placard with the dose rate should be affixed to any container used. A swipe test to detect external, removable contamination on the surface of the container should be performed. This test involves swiping the container's surface with small, cloth disks. Measurements of the radiation present on the disks are performed using appropriate radiation detection instrumentation. If the container is contaminated, it must be decontaminated or placed within a separate and clean container prior to shipment.

Funeral detail: US Air Force Honor Guard fold a flag that will be presented to the next-of-kin of a fallen veteran. (U.S. Air Force photo by Master Sgt. Christine Wood)

Funeral Arrangements and Burial

Cadaver: Example of embalming suite. Source: Guidelines for Handling Decedents Contaminated with Radioactive Materials, CDC, 2007.

Chemical/Biological Scenario

The CDC has strong recommendations for biological weapon event remains. These include: no embalming, no viewing, immediate burial without visualization, and cremation as the preferred method of final disposition. Chemical fatalities that are to be embalmed can pose a hazard as mixing of sodium hypochlorite (decontamination solution) and embalming fluid produces a hazardous gas. Attention to detail is paramount. Crematorium temperatures nullify all chemical agents.

Radiological/Nuclear Scenario

Radiologically contaminated remains should not be cremated. Cremation will create volatile material (radioactive gas, aerosols, and/or ashes) that will contaminate the crematorium, surrounding environment, and presents a respiratory hazard to crematory staff. If metal shrapnel is the sole source of radiation, surgically removing it may be an option that would render the remains safe. This removal should be done under the supervision of an RSO or health physicist.

It is unlikely that embalming radiologically contaminated remains would pose a threat to the embalmer or the environment since the amount of radioactive material in the bloodstream is likely to be very small. Still, the RSO or health physicist should record dose rate measurements from the contaminated remains, estimate or measure the dose to the embalmer, and estimate the effluent release of radioactive material to ensure compliance with the Nuclear Regulatory Commission (NRC) liquid effluent release limits.

Finally, it is recommended that the decedent is buried immediately and a memorial service is conduced without a viewing. In a situation where decontamination could not be successfully accomplished, it is common practice to bury the remains in a sealed, concrete burial vault. If a viewing is required due to emotional, cultural, or religious reasons, it may still be possible to do safely. Based on dose rate measurements, time and distance limits can be determined to ensure everyone who attends the viewing could do so safely within the annual general public limits dose limits (1milli-Sievert/year) as defined by the NRC. Video viewing is another alternative.

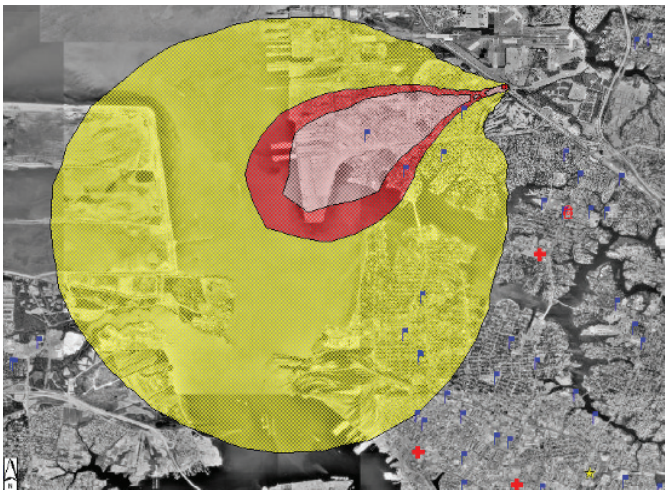
Decontamination team preparing plastic remains containers to use to transport body bags. Source: Guidelines for Handling Decedents Contaminated with Radioactive Materials, CDC, 2007

Conclusion

Each service is responsible for mortuary affairs support for its own personnel. The Army, as executive agent for MA, has the preponderance

of MA assets with four MA companies (two Reserve). With the current overseas operations and asymmetrical threat from terrorism, it is not reasonable to assume that Army MA support could cover all CBRN incidents in the continental US (CONUS) or outside of the CONUS. According to the Joint Pub 4-06, a fully manned (38 personnel) MADCP is capable of decontaminating 30-48 remains per 12 hours; however, recent studies have indicated this number may be significantly lower (10-12 remains per 12 hour shift). The MADCP capability would easily be overwhelmed by a significant or varied CBRN event. Available CRBN trained personnel may be used to augment the mortuary affair mission. Unlike patient decontamination, there is no urgency to performing the MADCP mission as long as refrigerated storage is on hand. More important than speed is the care and deliberation of the MA mission to document, identify, and reduce risk to all involved. Planners must ensure sufficient refrigerated storage is at the MADCP site to support the number of fatalities. If multiple WMD events occur, the MADCP site will be set up in a central location, normally co-located with other CBRN and/or medical assets. In the event of multiple CBRN events, planners may need to provide additional refrigerated storage assets in several locations to ensure remains are properly refrigerated as soon as possible. As a result, our operational plans must address detailed logistical support and must address how CBRN, medical, and MA experts will coordinate their efforts in handling the contaminated dead. These coordinated efforts are key to operational success.

Human remains that are contaminated with a chemical, biological, or radiological agent pose unique challenges for CBRN experts, MA personnel, planners, and commanders alike. Personnel with experience handling human remains may not be qualified to safely work in a CBRN contaminated environment. Also, those who are used to working in a CBRN contaminated environment may feel uneasy when asked to handle human remains. Planners will struggle trying tomatch the right people with the right training and the right equipment to such a complicated, but manageable situation. Finally, our commanders have limited plans and operational experience on which to base decisions about the disposition of CBRN contaminated remains. It is paramount that all fallen American heroes receive the same respect and honor, without regard to the circumstances that surround their sacrifice.



Plume: Example of computer generated predicted fallout plume from nuclear detonation. Source: DTRA CMAT handbook

For additional planning guidance, training information, and the latest mortuary affairs publications, visit the US Army Quartermaster Mortuary Affairs Center Mortuary Affairs Decontamination Collection Point website: http://www.quartermaster.army.mil/mac/mac main.html

ABOUT THE AUTHORS;

Dr. John Jacocks (COL, ret) is currently the Chief Medical Officer for the Defense Threat Reduction Agency (DTRA), Fort Belvoir, VA. He graduated from the Tulane University School of Medicine. He is a retired US Army Medical Corps/Special Forces officer, with board certification in Family Medicine, as well as a Master of Tropical Medicine and Hygiene degree from the Uniformed Services University of the Health Sciences. Dr. Jacocks currently oversees the medical aspects of DTRA's operational/occupational and travel medicine programs, with personnel deployed worldwide. He holds an adjunct assistant professor position at Georgetown University School of Medicine. His priority focus areas are medical readiness and the medical effects of weapons of mass destruction.

Capt Ryan Danley is a Health Physicist currently assigned as a Consequence Management Plans and Operations Officer at the Defense Threat Reduction Agency, Ft Belvoir, VA. He was previously assigned as the Radiation Safety Officer of Wilford Hall Medical Center, Lackland AFB, Texas, and Keesler Medical Center, Keesler AFB, Mississippi. He has a Bachelor of Science (BS) in Physics from Oakland University in Rochester, Michigan; and a Master of Science (MS) in Radiological Physics from the School of Medicine at Wayne State University in Detroit, Michigan.

Contributing Authors:

Mrs. Lee C. Green is a Department of the Army Civilian at the Combined Arms Support Command, Fort Lee, VA, where she is the team leader for Mortuary Affairs Modernization. A former Quartermaster Officer, she retired from the Army Reserves in 2007 after a career of logistics assignments which included three deployments, one of which was as the Director of the United States Army Memorial Affairs Activity-Europe in Landstuhl, Germany. Mrs. Green has a Bachelor of Science in Political Science from the University of New Hampshire, a Masters Degree in Public Administration from Western Kentucky University, and is a graduate of the US Army Command and General Staff College.

Ms. Gavin, as a Principal Research Scientist for Battelle, a non-profit organization, has performed management and program analyst duties to contractually support local, state, and federal agencies with enhancing their programs. As an accomplished technical writer, she has been asked to present both as an individual and as a representative of her clients in many forums on healthcare and public health disaster preparedness. Additionally, Ms. Gavin has been recognized by several agencies as the "go to" expert for her knowledge in mass fatality management, whereby she has helped several agencies, namely the DOD, Department of Health and Human Services (HHS), City of New York, Commonwealth of Virginia, State of Maryland, and Clark County Nevada, formulate their policies regarding managing mass numbers of CBRN contaminated human remains. Ms. Gavin has a Bachelor of Arts degree in Psychology from the University of California San Diego; Bachelor of Science in Emergency Health Services from the University of Maryland, Baltimore County; and a Master of Science in Emergency Health Services Planning, Policy, and Administration from the University of Maryland, Baltimore County.

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Defense Threat Reduction Agency Consequence Management Support to the Warfighter -- Consequence Management Advisory Teams

LTC Alicia GB Smith
Chief, Consequence Management Operations
DTRA

ABSTRACT

The Consequence Management Advisory Teams (CMAT) serve as the Defense Threat Reduction Agency's (DTRA) deployable operational consequence management advisement capability responsible for providing doctrinal and technical subject-matter expertise, advice, planning guidance, training, and hazard prediction modeling assistance. DTRA maintains a small group of trained military, civilian, and contractor personnel able to respond within hours to support combatant commanders, joint task force (JTF) commanders, or coordinating officials during all phases of chemical, biological, radiological, nuclear, and high yield explosive (CBRNE) incidents or for exercise support.

HISTORY OF CMAT AND GOVERNING PUBLICATIONS

Following Operation DESERT STORM, the Department of Defense (DOD) had just begun to align forces and units to meet the potential threat of a CBRNE attack against the homeland, but it was not considered a priority. At that time, DOD's priorities were preparing to meet World War III, holding off the Russian military might, and preventing a nuclear holocaust. The prevailing attitude as late as fifteen years ago was that handling such an event would be left to civilian responders, or it would be so catastrophic that the DOD would "take over." Priorities in DOD began to shift following the Aum Shinrikyo attack on the Tokyo subway as the United States' (US) leadership began to realize how easily a similar event could occur on our territory. Ten years ago, most of the Department of Defense Agencies that dealt with Weapons of Mass Destruction (WMD) research, development, test and evaluation, treaty inspections, and chemical demilitarization were combined to form the Defense Threat Reduction Agency (DTRA). Due to other national priorities, DOD continued to lack the funding, manning, and equipment to fully meet the challenge posed by WMD. In many cases, National Guard and reserve units were forced to use operational and maintenance funds to purchase "commercial off-the-shelf" equipment and pay for hazardous materials training to meet the assigned mission to support civil authorities in the event of a WMD attack. Attitudes changed drastically following the attacks of 11 September 2001 (9/11), and were even further refined following the disaster of Hurricane Katrina. The Department of Defense fully recognizes the threat posed to the nation from WMD and is quickly transforming to meet this challenge.

The concept for a special WMD advisory team for operational and strategic commanders is not a new one. In fact, the advisory team concept on WMD is almost 20 years old. The Defense Threat Reduction Agency's Consequence Management Advisory Teams (CMAT) of the past 10 years evolved from the Defense Nuclear Agency's, and then the Defense Special Weapons Agency's, Defense Nuclear Advisory Teams (DNAT).[1] When the National Military Strategy to Combat WMD[2] identified one of the three pillars of combating WMD as consequence management (CM), the DNAT title changed to CMAT and the members assigned had to become more than just advisors to a nuclear or radiological event. They in fact needed to become subject matter experts (SME) advising across the spectrum of CM for WMD CBRNE threats.

DOD Directive 5105.62, DTRA's charter, states that the Director of DTRA shall "Provide emergency response support, including training exercises, CBRNE advisory teams, and operational planning assistance for matters involving CBRNE events."[3] To meet the intent of this directive the CMAT concept evolved to include advisors and planners that could assist in all phases of a CBRNE CM incident or exercise.

In addition, the new Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3214.01C, *Military Support to Foreign Consequence Management Operations for Chemical, Biological, Radiological, and Nuclear Incidents*, signed in January 2008 by the Secretary of Defense, profoundly changed how DTRA provides advisory capability to the combatant command. Previously, US Northern Command (USNORTHCOM) held the responsibility

for providing a foreign CM (FCM) advisory team for a chemical, biological, radiological, and nuclear (CBRN) event which DTRA CMAT supported as augmentees. The January version of CJCSI 3214.01C details the responsibility to provide the FCM advisory capability to US Strategic Command (USSTRATCOM), upon request by a geographic combatant commander (GCC) and approval of the Secretary of Defense (SECDEF). The instruction directs DTRA to provide the core and leadership of the Joint Technical Advisory CBRN Element (JTACE). USSTRATCOM is responsible for deploying the JTACE, which comes under the operational control of the requesting command upon arrival.

Once the warning order is sent to DTRA from the Joint Staff (JS), USSTRATCOM will have operational control (OPCON) of the CMAT, designated as the "JTACE minus." The JTACE Lead and Deputy (designated CMAT) and the DTRA Liaison Officer (LNO) (to the supported GCC) will help USSTRATCOM craft the right request for forces (RFF) for the specialists needed. The JTACE is designated for non-hostile environments (permissive environments) and for a maximum of a 30-day deployment. In addition to the CMAT capability, the JTACE encompasses deploying scientists recognized in a particular specialty to meet the needs of the GCC in support of the Department of State (DOS) for a FCM incident.

As the CMATs evolve from the "two modelers in the corner" to a "full spectrum CM Advisory Capability," other specialists will be needed to augment the deploying DTRA core team. The Department of State will normally be the lead agency for FCM. Currently, DTRA has an inter-service support agreement (ISSA) with the Armed Forces Radiobiology Research Institute to provide Medical Radiological Advisory Teams upon request to support a deploying CMAT for a radiological or nuclear incident. To meet the changing needs of the warfighters, the Consequence Management Division is working to create support agreements with appropriate organizations in order to provide specialists that cannot be found internal to DTRA. The DOS does not include high yield explosives in their definition of foreign CM. They have placed high yield explosive events in a separate category, outside of FCM.

On the domestic front, however, USNORTHCOM has maintained high yield explosives as part of an all hazards approach to CM. What DOD identifies as CM, civilian counterparts in the United States call "emergency management." Civil authorities respond to emergencies using what is known as the incident command system (ICS), which is bound by the National Incident Management System (NIMS), as outlined in the National Response Framework (NRF). All federal agencies, including DOD are also required to conduct response activities in accordance with the guidance in the NRF. The DOD foundational doctrine to respond in support of civilian authorities in an emergency is Joint Publication 3-28, *Defense Support to Civil Authorities (DSCA)*. In JP 3-28, a CMAT is defined as, "Teams of two to nine experts, including planners, modelers, lawyers, public affairs (PA) specialists, CBRNE specialists, radiation physicians, and health physicists." DTRA further defines the capability in the CMAT standard operating procedure (SOP) as, "The Defense Threat Reduction Agency's deployable operational consequence management advisement capability responsible for providing doctrinal and technical subject-matter expertise, advice, planning guidance, training, and hazard prediction modeling assistance in support of combatant commanders, JTFs, or coordinating officials during all phases of chemical, biological, radiological, and nuclear, and high yield explosive (CBRNE) event or exercise."

CMAT COMPOSTION AND CAPABILITIES

The DTRA provided advisory capability has undergone numerous changes in the last 10 years, but the CMATs of today bring a unique capability to support the warfighter. Not only are the members capable of predictive hazardous modeling utilizing the Hazard Prediction and Assessment Capability (HPAC) program and facilitating information (such as, gathering the appropriate technical details, determining the flow, generating technical data, etc.) through the DTRA reachback center, but they are specifically trained to provide consequence management advice to a commander and the commander's staff during all phases of a CBRNE incident or exercise.

The current composition of the CMAT is a core of two CBRNE CM experts. The specific expertise of this core can be customized depending on the situation, the needs of the supported command or organization, and is available for 24-hours/7 days a week (24/7) response. Teams can be combined to form a CMAT section and can be augmented by specialists in specific fields through DTRA's CMAT Augmentee Program. CMATs are not individual augmentees to a staff. CMAT

members are trained and exercised to operate as a team. In fact, their capability is immeasurably reduced when required to operate during an incident as individuals (i.e., they are not the watch officer). The strength of a CMAT lies in the variety of levels of experiences and expertise of its members and the ability to draw on the one another's knowledge.

CMAT core members are active duty military from the US Army, US Air Force, US Marine Corps, and US Navy, as well as DOD civilians, and trained DOD support contractors. The military members have an average of 16 years of active military service, and operational and planning experience. Most CMAT members have educational and training experience, and staff officer experience. Specialties and backgrounds are extremely varied: from Army chemical officers, to Air Force missileers, to joint service explosive ordnance disposal officers, and to force protection specialists. All members undergo a rigorous and challenging training program, and board certification process. Four certification levels exist within DTRA's CMAT CM Specialist Certification Board: basic, advanced, senior, and master. The CMAT CM Specialist Board is a partnership between the Consequence Management Division, the Defense Nuclear Weapons School (DNWS), and the US Army Reserve Consequence Management Unit, Abingdon, Maryland.

The CMAT Augmentee program at DTRA is managed by the Consequence Management Division Operations Branch. Volunteers from throughout the agency are screened, accepted, and then trained in one of two tracks: the CMAT member track or the CMAT subject matter expert (SME) track. The CMAT member track includes the same training as the core members, but the individuals are given a longer time period to meet certification requirements. The CMAT SME track includes most of the same courses required of CMAT members, with the exception of the modeling courses. The CMAT SME must maintain a specialty in his or her field and is also certified through the CMAT CM Certification Board.

GLOBAL DEPLOYMENT

The ability to globally deploy is a key capability of the CMAT. CMAT supports the war-fighters, supports civil authorities on the homeland, and supports the Department of State during a foreign consequence management response for "friends and allies"[4] who have requested US assistance. CMAT members rotate the ready team duty, which requires members to be able to be equipped and deployed within hours of notification. CMAT capability must be requested by a supported command through the RFF process. In the RFF, the command must specify if 24/7 capability is required for the incident or exercise, and what the prevailing threat or scenario entails. Defining these requirements in the RFF process enables DTRA leaders and crisis action planners to task organize and deploy the right specialists with the team, and to determine the best number of personnel to provide in order to meet the requested support. Behind the scenes, the DTRA LNO will be working closely with the operations and planning sections of the combatant command and the DTRA Consequence Management Division. Historically, when RFFs are not clear, or the supported command does not, or can not, utilize the DTRA LNO, CMAT teams have not fully met the expectations of the command. In such a situation, the command can contact DTRA (operations center) to deploy the correct specialists or to provide connectivity to specialists through our reachback center, which does have video-teleconferencing (VTC) capabilities.

TECHNICAL ASSISTANCE

While the CMAT is most readily known for its hazard prediction modeling capability, an operational CMAT is able to integrate the hazard prediction models with other situational awareness and consequence management response information, in collaboration with the planners and operators on the staff. The team is able to take the technical information provided by civilian and National Guard first responders and interpret the operational concerns that the commander requires for informed decision making. Through the DTRA Reachback Center and DTRA Operations Center portals, CMATs are able to reach into the specialists, scientists, and National Guard civil support teams to provide timely and accurate situational awareness. In the past, CMATs have assisted commands in course of action development and in the military decision making process.

All CMAT members are trained on the use and interpretation of the HPAC and Consequence Assessments Tool Sets (CATS)[5] hazardous prediction modeling programs. The Joint Effects Modeling (JEM) system is the program of record for the DOD and is expected to be fielded through the Joint Program Executive Office for Chemical and Biological Defense Programs. As it is fielded, JEM training will become

a basic requirement for all CMAT members. It is anticipated that in the near future, until people gain familiarity with JEM and it becomes institutionalized within the DOD, there will be confusion and multiple plume predictions generated during exercises. CMAT members are still able to interpret and deconflict the many models that may come through a command post during an incident or exercise.

In an attempt to deconflict the many models coming through a command or operations center during an exercise or actual incident, the Department of Homeland Security (DHS) established the Interagency Modeling and Atmospheric Assessment Center (IMAAC) in 2006. The purpose of the IMAAC is to produce, coordinate, and disseminate consequence predictions for airborne hazardous material releases. The IMAAC serves as the final authority on which prediction model will be used during an actual CBRNE CM incident. However, the IMAAC may not participate in DOD or national level exercises. DTRA Reachback or CMAT can serve as the white cell (or simulation cell) for the IMAAC during exercise play when the IMAAC is not participating.

INSTRUCTION

A noted trend in all the CM exercise after action reports was the need for CBRNE CM expertise on the command staffs. DTRA has been working through its campaign process to fill the requirement to build CBRNE expertise in the DOD for homeland defense. The DNWS and DTRA's Consequence Management Division have teamed to develop a CBRNE Consequence Management Certification Board, to meet the needs of certifying DTRA's CMAT specialists and provide a foundation for developing DOD CBRNE CM expertise. Currently, the process serves to provide certified CMAT specialists to meet the joint staff readiness requirements of the DTRA. DNWS and the Consequence Management Division are working closely to offer board certified CBRNE CM Specialist certifications at the senior and master levels; and, in the next 12 months will develop a basic and advanced level CBRNE CM Specialist certification. DTRA will need to coordinate and collaborate with all the services to minimize duplication of effort and avoid infringing upon other DOD academic programs, or the Services' Title 10 responsibilities to man, train, and equip their forces.

CMAT capability includes the ability to train and instruct on all phases of CBRNE response. Certified CMAT members have assisted commands preparing to go to Iraqi Freedom; to prepare for exercises; and in the classrooms of the Senior Service and Intermediate Service Schools. When requesting training, contact the Consequence Management (CM) Division of DTRA through the DTRA Operations Center. The CM Division is able to tailor classes and seminars to meet the command's or course manager's specific objectives.

PLANNING ADVISOR

Most understand no plan will ever hold up after the first hour or two of a crisis. However, the stronger the planning process and the plan itself, the more likely the leadership will be able to cope and adjust to meet the challenges or issues that arise during CM operations. Plans should be continually tested and reviewed, not just left on the shelf. CM and emergency management plans, policies, doctrine, leadership, and technologies change on almost a weekly basis. CMATs can assist during planned visits or during exercises to review and improve command plans and SOPs. CMATs share the best practices and lessons learned with supported combatant commands, or can help to develop best practices for the needs of that command's specific area of responsibility (AOR).

Combatant commands' and component commands' plans need to be explicit on when to request the CMAT capability. It is also recommended that a draft RFF be built for each type of CBRNE hazard that may be encountered in the respective AOR. The US Strategic Command (USSTRATCOM) Center for Combating WMD (SCC-WMD) J8 has developed several basic templates for the chemical, biological, and radiological/ nuclear situations that may prove useful to command staffs during planning and exercise development (these will be posted on the CM pages of the Combating WMD information portal).

The CMAT needs to be included in the force flow support documentation of each plan. Remembering that a request for "one CMAT" is in most cases going to be interpreted as the ready team (2 personnel), it is recommended that planners consider more appropriate requirements language (for example, "24/7 CMAT capability with nuclear medicine advisement capability"), which would require two CMAT (4 personnel) plus 1-2 CMAT subject matter experts, for a total of 5-6 personnel. If it is anticipated that more than one CMAT capability will be required, then follow-on

CMAT support needs to be included in the plan and force flow projections, as well. Remember, CMAT assistance can be requested to aid in the development of the plans and force flow projections.

Combatant command plans need to be clear on where the CMATs are to report. Including DTRA in the plan at the combatant command level without any further information will have the CMAT arriving at the combatant command headquarters, when in fact the CMAT may be more useful to the command at the component or JTF level. Again, this emphasizes the need to seek CMAT assistance in the development of the plans.

IN THE FIELD

In the last 12 months, CMATs have served combatant commanders, joint task force commanders, component commanders, and also as members of the joint interagency coordination group for a national level response. **CMATs have proven their utility in numerous capacities, but have proven most effective when supporting the J3 or G3 staff, working closely with the CBRNE cells and staff officers.** Having the CMAT members at this location throughout the incident/exercise allows continuous and timely contact with other deployed CMATs and the combatant command DTRA LNOs.

Currently, no other similar active duty DOD joint capability exists to provide stategic and operational level CBRNE CM advice to a lead federal agency or DOD command. Many organizations are building advisory capabilities to serve at the operational and tactical levels. In many exercises, the CMATs have assessed that, in response to CM-related crises, many command staffs are not aware of existing capabilities to assist them; nor are they aware of typical questions that arise or capabilities that exist to assist during critical moments requiring their immediate attention.

The DTRA Consequence Management division constantly seeks information on the DOD capabilities that exist to assist civil authorities during a CBRNE event. The Combating WMD Directorate of the Defense Threat Reduction Agency is leading a collaborative effort with the USSTRATCOM Center for Combating WMD (SCC-WMD) to develop, operate, and maintain the Interagency Combating Weapons of Mass Destruction Database of Responsibilities, Authorities, and Capabilities (INDRAC). The INDRAC database provides the US government (USG) combating WMD community with a 24/7, single source, web-based reference of DOD and USG-wide combating WMD responsibilities, authorities, and capabilities. CMAT members are trained in the use of INDRAC and can quickly advise on existing CBRNE-related organizations which could be called upon in the event of a CBRNE incident.

EXERCISES

Just as important on how to engage DOD forces and assets during a crisis, is the knowledge of when and how to disengage, redeploy, and reconstitute. Most CM exercises cease at the point where thousands of personnel have to be decontaminated, or hundreds of non-ambulatory casualties have to be picked up off the ground and transported. DOD is not able to train in the exercise of a full-scale calamity to the level of "realistic" long-term operations exercise fidelity. DOD will not likely ever have the ability to exercise to that level of fidelity – due to availability of troops and the civilian emergency responders to exercise at the same time. Other challenges also exist such as budgetary constraints and prioritization for CM training and exercises versus warfighting skills training. However, command staffs do have the ability to run table top exercises (TTX) and command post exercises (CPX) through the response phase and into the recovery phases of a CM incident. TTXs afford an excellent opportunity to explore the potential problems that will arise during a crisis that have not been included in the plans or organizational SOPs. CMATs are able to advise the staff and commander on all phases of a CM incident, to include when and how to integrate with civilian responders. CMAT members are trained and have the ability to facilitate CBRNE TTXs and CPXs. These are most effective when accomplished with the leadership of the organizations that DOD will be supporting (e.g., federal, state, and local, or DOS and allies).

Many exercises conducted over the last 10 years have captured the same mistakes and shortfalls. For example, in the past while conducting a response to an emergency, DOD forces could not communicate with the civilian responders via radio. DOD has worked hard to correct many of the equipment shortfalls that have been identified. Now both the military and civilians have mobile command post vehicles with sophisticated communications systems that can take in

multiple signals and "translate" them into a common operating picture. In some cases, the shortfall may be in the plan, doctrine, or lack of training. CMAT certified individuals are trained to serve as observer/controllers for CM exercises. They are aware of the lessons learned captured across the combatant commands' AORs, are cognizant of the doctrine and policy of how a CM response should be conducted, and where DOD "fits in the picture". The CMAT is able to articulate the aforementioned observations into layman's terms and develop those observations into lessons learned.

CMAT members often serve as exercise directors for exercises sponsored or supported by the Defense Threat Reduction Agency. If the exercise director is not CMAT certified, a CMAT trusted agent is appointed to support the exercise planning cycle. CMAT trusted agents attend the planning conferences and assist with scenario development. Predictive hazard modeling is used to prepare as realistic an exercise scenario as possible. CMAT members are available to assist JTFs and component staffs with exercise scenario and master scenario event list development for their TTXs, CPXs, and full scale exercises.

CONCLUSION

DTRA will continue to provide certified CMATs as required in the agency's charter and assess the situation on how best to train, maintain, and manage the CMATs to meet the needs of the combatant commanders. The future will include helping to build the CBRNE CM expertise on the supported staffs. A combatant command recently expressed concern that CMAT would not be able to reach the staff in time to make a difference in the early hours of an incident. By increasing the foundational knowledge of the in situ members of the staff and integrating consequence management classes or electives into professional military education, the future staffs and commanders will be better prepared to handle a CBRNE crisis until specialists can be sent forward to support them.

Supported agencies or commands do not have to wait until post-event to request a CMAT. CMATs can be deployed (or sent temporary duty (TDY)) based on the threat, during preparedness exercises, or for CBRNE CM planning assistance. In a true crisis, the ready team will deploy (regardless of their specialties), upon request of a command and approval by the SECDEF, to provide an interim capability and on-site support until other CMAT specialists more closely aligned to the situation's response requirements can be sent as follow-on support.

Current CMAT capability is available during adaptive planning, exercises of all sizes, and crises across the spectrum of CM incidents. For pre-planned events such as the Olympics or international events, CMAT can assist in the planning phase through the execution phase. CMAT capability is requested through the DTRA Operations Center (703-767-2003 or opscntr1@dtra.mil) and typical RFFs for each type of scenario can be found on the consequence management pages of the Combating Weapons of Mass Destruction Information Portal (CWIP). The CWIP link is located on the DTRA SECRET homepage under the Operations page link.

DTRA CMATs have a proven track record. In the last 12 months, CMAT members supported over 200

CMAT Summary:

- **Fills a gap in DOD knowledge on CBRNE CM (translates "geek speak" to "operational speak")**
- **Crisis action planning, hazard effects analysis and interpretation, Defense Support to Civil Authorities (DSCA), policy/doctrine experts**
- **14 teams of 2 personnel each available to support across DOD**
- **Rare to have PhDs assigned to DTRA, several have a Masters degree in at least one (1) specialty field; almost all have Bachelors or are experts in their specialty area (i.e., explosive ordnance disposal)**
- **Small footprint, typically 2-4 depending on operations tempo (OPTEMPO)**
- **Advise during foreign or domestic CM, or warfighting conditions**
- **Are NOT individual staff augmentees**

meetings, exercises, planning events, and operations without any negative feedback from supported groups or commands. The continuously changing realm of consequence management means that the agency must continue a forward vision of supporting the combatant commands by training and maintaining the expertise on CBRNE consequence management. The overall vision for the agency's CMAT will be that only those service members already certified as advanced CM specialist or higher will be selected as a DTRA CMAT member, and eventually all CMAT members will be certified emergency managers. The agency has initiated the first steps in attaining this vision through CMAT CM specialist certification and has improved the capability of its CMATs from modeling to advising the commander throughout the entire spectrum of a CM event. For inquiries on CMAT or DTRA's Consequence Management division, contact CM@dtra.mil.

Endnotes:

[1] DNA and DNWS Charters (DODD 5105.31)
[2] National Military Strategy to Combat Weapons of Mass Destruction 2006
[3] DODD 5105.62, 2005, paragraph 5.5.2.
[4] CJCSI 3214.01C, Jan 2008
[5] Consequences Assessment Tool Set (CATS) program: Developed for DTRA and FEMA, uses a wide variety of databases and maps, can integrate with HPAC and numerous other modeling and mapping programs.

Exercise: NATO CM Exercise IDASSA 07. Date:5/1/2007

An emergency response team performs casualty evacuation of an exercise participant after a simulated chemical release at the Gazenica port facility in Croatia.

About the Author:

LTC Alicia GB Smith has over 20 years of experience at US government agencies, military installations, and training facilities. LTC Smith spent three years as an Assistant Professor of Chemistry and Microbiology at the United States Military Academy at West Point, NY. For two years she was the project manager for two multi-million dollar classified Chemical, Biological, Radiological,andNuclear(CBRN)Counterproliferation technology programs. She then served as Training with Industry Officer in support of the Department of Energy, where she worked on emergency management projects at the Savannah River Site. LTC Smith is currently the CM Operations Branch Chief for the Defense Threat Reduction Agency. She is an Advanced level certified CMAT member and working on completion of the requirements to become a Certified Emergency Manager (CEM). LTC Smith earned a BS in Pre-veterinary medicine and a BS in Zoology from North Carolina State University, and an MS degree in Biology from the University of Alabama.*

*CEM ® is a peer review process administered through the International Association of Emergency Managers.

Exercise: Eagle Resolve 2008. Date:4/30/2008

A hazardous materials team measures simulated radiation levels at Al Taweelah, United Arab Emirates.

Joint Task Force Civil Support (JTF-CS): A National Asset

Master Sergeant Michael Eck, USMC (Retired)

> ***"September the 11th provided a warning of future dangers, of terror networks aided by outlaw regimes and ideologies that incite the murder of the innocent, and the use of biological and chemical and nuclear weapons that multiply destructive power."*** [1] ***-*** *President George W. Bush*

> ***"Terrorists and/or rogue states will attempt multiple, simultaneous mass casualty CBRNE attacks against the US Homeland. What is at issue is the timing of the event, not that it will occur."*** [2] *- Paul McHale, Assistant Secretary of Defense for Homeland Defense*

March 11, 2004- Ten bombs concealed in backpacks are detonated via cell phone on crowded commuter trains in Madrid, Spain, killing 191 people and injuring more than 1,500.

July 23, 2005- At least 83 people are killed when three bombs explode in Sharm El-Sheikh, Egypt.

August 10, 2006- Police conduct a coordinated sweep in and around London and Birmingham, England to break up a plot to blow up 10 transatlantic passenger jets.

September 8, 2006- A car bomb exploded near the US Embassy in Kabul, killing at least 16 people.

Date not yet known- A Chemical, Biological, Radiological, Nuclear, high-yield Explosive (CBRNE) event in the United States.

> ***"Defending our Nation against its enemies is the first and fundamental commitment of the Federal Government."*** [3] ***-****President George W. Bush*

The Department of Defense (DOD) remains ever vigilant in its effort to prevent further attacks on American soil. In response to the tragic events of 11 September 2001, the Secretary of Defense created US Northern Command (USNORTHCOM). USNORTHCOM provides command and control of DOD's Homeland Defense efforts and to coordinate Defense Support of Civil Authorities (DSCA). USNORTHCOM's specific mission is to conduct operations to deter, prevent, and defeat threats and aggression aimed at the United States, its territories and interests within its assigned area of responsibility (AOR); and, as directed by the President or Secretary of Defense, to provide DSCA. DSCA includes support of civil authorities conducting consequence management (CM) of a chemical, biological, radiological, nuclear, or high-yield explosive (CBRNE) incident. Domestic CBRNE CM support encompasses both deliberate and inadvertent CBRNE incidents, including terrorism, acts of aggression, industrial accidents and acts of nature in the 50 States, US territories, and possessions.

Force Requirement

The unit charged to assist civil authorities in conducting CBRNE CM within the USNORTHCOM AOR is Joint Task Force Civil Support (JTF-CS). JTF-CS is a standing Joint Task Force headquarters located on Fort Monroe, near Norfolk, Va. In response to base re-alignment decisions, it will eventually relocate to Fort Eustis, Va. Tracing its establishment back to 1998, through actions taken by the Secretary of Defense and the Chairman Joint Chiefs of Staff (CJCS), JTF-CS stands ready to provide command and control of military resources when called upon to support federal, state and local authorities in the United States, its territories and its possessions as a result of a CBRNE attack or incident within America's borders.

On Oct. 1, 2008, US Army North (ARNORTH), as USNORTHCOM's, Joint Force Land Component Commander (JFLCC), assumed operational control of JTF-CS. On order, JTF-CS deploys in response to a weapon of mass destruction (WMD) attack with CBRNE consequences; a team of military and civilian planners then executes a plan that brings a variety of military capabilities to assist the federal, state and local agency response to CBRNE incidents.

Interagency – National Response Plan Partnerships

Preparing for and executing a domestic consequence management mission requires JTF-CS to work closely with the many other federal, state, and local agencies that also respond to CBRNE incidents.

Although the Federal Emergency Management Agency (FEMA), under the Department of Homeland Security (DHS), will most likely be the agency JTF-CS supports during an incident of national significance, liaison with other federal and state agencies, is critical. These agencies include, but are not limited to, the Department of Justice, the Department of Energy, and the Centers for Disease Control, various State Emergency Management Agencies, state and local law enforcement agencies, state National Guard headquarters, and state medical and public health agencies. The Department of Defense is just one member of the federal response community. JTF-CS therefore recognizes the vital need for interagency coordination.

Capability / Skill Set Requirement

As a partner in the National Response Framework, DOD provides support to state and local authorities managing responses to natural disasters. However, the forces, equipment, and experience required to effectively respond to a CBRNE incident are very different from those needed to respond to natural disasters. The JTF-CS was established to develop the expertise and maintain the focus on the mission of providing command and control during domestic CBRNE CM missions. Authorization and designated forces are articulated in the CJCS CBRNE Consequence Management Execute Order (EXORD).

DOD CM support and assistance to civil authorities may require DOD's robust logistical roles, skills and structures, such as the ability to mobilize large numbers of people, to move large amounts of material and equipment, and to provide other logistical support beyond civil authority capability.

Legal / Funding Constraints

JTF-CS accomplishes its CM mission in strict adherence to existing federal law, which carefully balances the support capabilities of the US military with the needs of civil authorities during emergencies. The primary mission authority for DOD to engage in domestic consequence management operations is the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 *USC* 5121 *et seq*). The Stafford Act authorizes the President to provide disaster and emergency assistance to state and local governments upon receipt of a request from the state or territorial governor. Only upon Presidential and Secretary of Defense direction, can JTF-CS (*USC* Title 10 forces) engage in civil support domestically. When deployed in any domestic setting, JTF-CS supports the primary and coordinating agencies, as defined in the National Response Framework. This support will continue throughout the CBRNE CM operation so long as JTF-CS support is required to supplement civil capability. It is understood that the long-term recovery efforts are the responsibility of civil authorities.

Tasks and Responsibilities

JTF-CS' ongoing support includes deliberate planning activities; developing CBRNE doctrine and identifying requirements; analyzing local and state emergency plans to help anticipate requirements for DOD assistance; and managing high fidelity geo-spatial products and geographic information system (GIS) data sets. These data sets relate to US municipalities and critical infrastructure and are established in a web-based architecture. JTF-CS participates in joint and interagency exercises and supports contingency planning for National Special Security Events (NSSE). Additionally, JTF-CS has taken the lead to assist the JFLCC and USNORTHCOM with situational awareness and intergovernmental coordination efforts to improve DOD civil support readiness in the face of current threats from pandemic influenza.

In the event of multiple CBRNE events, JTF-CS may be directed to deploy a Joint Planning Augmentation Cell (JPAC) to support other domestic command and control headquarters. The JPAC is a tailored group of functional planners that assist a supported staff in planning joint force CBRNE CM operations.

Concept of Operations

The JTF-CS concept of operations guides the organization in executing its mission and describes how it will respond. This concept of operations has been validated through the CJCS exercise program. Taking lessons learned from these exercises, the concept of operations has then been retested and validated

in numerous subsequent exercises. The concept of operations is divided into six separate phases.

Phase 0, Staging

Phase 0 is maintaining continuous situational awareness and preparedness. Actions in this phase include interagency coordination, exercises, and public affairs outreach (which continues through all phases). Phase 0 ends with the identification of a potential CBRNE-CM incident.

Phase I, Anticipate

Phase I begins with the identification of a potential CBRNE CM mission or when directed by the Secretary of Defense. The purpose of Phase I is to position forces to expedite the response. Phase I success includes the deployment of the Defense Coordinating Officer (DCO) and the Defense Coordinating Element (DCE), in coordination with state and local officials. Phase I ends when the CBRNE Consequence Management Response Force, or CCMRF, receives a prepare-to-deploy order.

Phase II, Respond

Phase II begins with the CCMRF deployment and may be concurrent with Phases 0 and I. Because of the nature of CBRNE CM operations, forces will likely deploy into and out of the Joint Operations Area (JOA) as long as the CBRNE CM operation requires DOD support. Phase II success equals forces deployed with enough consequence management capability to accomplish the mission. Phase II ends when response forces are ready to conduct operations in the JOA.

Phase III, Operate

Phase III begins when CBRNE CM operations commence. The purpose of this phase is to conduct consequence management operations. Success equals civil authorities capable of effectively continuing consequence management requirements.

This phase ends with civil authorities prepared to assume responsibility for operations. In cases where JTF-CS is redeployed to a secondary CBRNE site, this phase would end for JTF-CS when a follow-on DOD force assumes command and control of continued CM operations at the initial CBRNE site.

Phase IV, Stabilize

Phase IV begins when civil authorities or follow-on DOD forces scale down operations and civil authorities resume "new normal" activities. This phase ends when redeployment criteria have been met.

Phase V, Transition

Phase V starts when all response forces begin redeployment and operational control transfers to the designated command, usually the DCO. Response forces will deploy to follow-on or a near simultaneous CBRNE incident or return to their home base. Success equals a complete transfer of responsibilities to civil authorities.

Sourcing the CCMRF

JTF-CS, in accordance with the CJCS CBRNE CM EXORD, and the USNORTHCOM CONPLAN 3500, is sourced through force providers, such as US Joint Forces Command (USJFCOM). On Oct. 1, 2008, USNORTHCOM was assigned a dedicated force capable of responding within 48 hours to CBRNE incidents in the homeland. The CBRNE CCMRF is a team of about 4,700 joint personnel that deploy as DOD's initial response force to a CBRNE incident.

Each CCMRF will be composed of three functional task forces - Task Force Operations, Task Force Medical and Task Force Aviation - that have their own individual operational focus and set of mission skills. Their capabilities include search and rescue, decontamination, medical, aviation, communications and logistical support.

Summary

JTF-CS is not a primary agency as defined in the National Response Framework, nor does it provide a first response capability commensurate with local and state incident specific responders, to include the National Guard. JTF-CS is, however, ready to support those first responders, as directed with control authority maintained by the DOD. The authorization process to deploy JTF-CS begins with a request from a governor to the President for federal support. JTF-CS (DOD) support would then be contingent upon a follow-on Presidential, or Secretary of the Department of Homeland Security declaration. In coordination with other federal and state agencies, JTF-CS continuously prepares for such an event; to respond to

the broadening spectrum of potential terrorist attacks – chemical, biological, radiological, nuclear, and high-yield explosive – anywhere in the United States.

Author's note: *The author would like to thank the following individuals for their assistance in the preparation of this article: Colonel Randall Holm, Former Deputy Commander, JTF-CS; Lieutenant Colonel James Shores, J5 Policy and Doctrine Chief; Major Maria Quon, USNORTHCOM PA representative; and Mr. Richard Burmood, Senior Policy & Doctrine analyst, JTF-CS*

Members of the 379th Chemical Company, a U.S. Army Reserve unit from Chicago, Il., participate in a training exercise Aug. 28, at Great Lakes Naval Station. The 379th is part of the CBRNE Consequence Management Response Force, a response force made up of military units that would fall under the command and control of JTF-CS in the event of a chemical, biological, radiological, nuclear or high-yield explosive event within the United States. Photo by MC2 Thomas Miller

About the Author:

Mr. Eck, a native of Findlay, Ohio, joined Joint Task Force Civil Support as the Deputy Director of Public Affairs, in October 2001. During his time in the Marine Corps, he was assigned to Marine Corps Air Station, El Toro, Calif., as the Tustin Air Base correspondent. He later became the editor for the El Toro base newspaper. He also served as a copy editor on the news desk for Pacific Stars and Stripes, Tokyo. He taught print journalism at the Defense Information School at Ft. Benjamin Harrison, Ind. He finished his career in the Marine Corps as the station manager for American Forces Network, Okinawa. He retired from the Marine Corps in September 1998.

Endnotes:

[1] George W. Bush, *CNN transcript report on President's speech on fighting terrorism* (National Defense University. 8 March 2005)

[2] Paul McHale, Assistant Secretary of Defense for Homeland Defense, *Heritage Foundation's Lehrman Auditorium, hosted by K.R Holmes, Foreign and Defense Policy Studies and the Institute for International Studies, The Heritage Foundation*. Emphasizing excerpts from the2005 National Strategy for Homeland Defense and Civil Support (Washington, D.C, 14 July 2006)

[3] George W. Bush, *The National Security Strategy of the United States of America* (Washington, D.C, 17 September 2002)

Gen. George W. Casey Jr., Army chief of staff, addresses members of the CBRNE Consequence Management Response Force during Joint Task Force Civil Support's recent ROCK Drill at Fort Steward, Ga. Photo by Staff Sgt. Chris Hale.

United States Joint Forces Command (USJFCOM)
Joint Center for Operational Analysis (JCOA)

JCOA Products Summary

This is a list and description of JCOA products. All are, or soon will be, available on SIPRNET at http://www.jfcom.smil.mil/jcoa. Although some of the products listed below are classified, all of the descriptions herein are unclassified.

HOMELAND DEFENSE PRODUCTS

Defense Support of Civil Authorities (DSCA) –Applying the Lessons of Hurricane Katrina (2007)

A follow-on to the Hurricane Katrina report, this study develops a framework for analyzing incident management and highlights challenges that affect the level of unmet requirements in a catastrophe. It illustrates ways in which post–Katrina improvements can close the response gap. This product is unclassified – FOUO.

Hurricane Katrina National Response to Catastrophic Event –Applied Lessons for Consequence Management (2006)

The report and briefing focus on the national response to Hurricane Katrina by local, state, and federal agencies during the month between the storm's formation in the Atlantic Ocean and the post-hurricane stabilization of conditions in the Gulf Coast region. The report concentrates on response – as opposed to disaster mitigation or recovery – because the role of the Department of Defense (DOD) in coping with domestic disasters lies primarily in providing civil authorities with response capabilities, not in providing assets for long-term recovery. This product is unclassified – FOUO.

National Response to Biological Contagion: Lessons from Pandemic Planning (2006)

Future biotechnology advancements will make it easier for a wide range of adversaries – including terrorist organizations – to launch a biological attack. This product studies biological incidents and examines USNORTHCOM's role as the Global Synchronizer for Pandemic Influenza planning. The study goes beyond the example of Pandemic Influenza to inform decision makers and planners to help mitigate the effects of pandemic or similar biological threats. It identifies gaps and shortfalls in DOD's participation in the nation's preparation and response to a significant pandemic. This product is unclassified – FOUO.

HUMANATARIAN ASSISTANCE/ DISASTER RELIEF PRODUCTS

International Humanitarian Assistance and Disaster Relief (HADR) Operations - Annotated Brief (2007)

The HADR study analyzes four major Humanitarian Assistance/Disaster Relief (HADR) events: the Haiti Peacekeeping mission (2004), the Indian Ocean Tsunami (2004), the Pakistan Earthquake (2005), and the Guatemala Mudslides (2005). Analysis of these events revealed a number of common enabling capabilities that were critical for success in a HADR response. This product is unclassified – FOUO.

GUATEMALA Disaster Relief - US Response to Hurricane Stan, Oct 2005 (2006)

In October 2005 a team of JCOA observers, in conjunction with USSOUTHCOM, conducted a study of JTF-Bravo's quick response in the initial phase of helping the Guatemalan government deal with the devastation caused by Hurricane Stan. This product is unclassified – FOUO.

Humanitarian Assistance - Disaster Relief in Pakistan (2006)

In October 2005 a devastating earthquake caused widespread destruction in northern Pakistan and adjacent areas. In

response, CENTCOM designated Expeditionary Support Group One as the Combined Disaster Assistance Command – Pakistan to assist the Pakistani government in recovery efforts. A team from JCOA observed and detailed the effectiveness of US forces in accomplishing the mission and strengthening the strategic ties which bind Pakistan and the US in the global war on terror. This product is unclassified – FOUO.

Operation SECURE TOMORROW (Haiti) 5 March- 30 June 2004 (2005)

This study focuses on issues that concerned US Southern Command, Combined Joint Task Force-Haiti, and their staffs as US-led multinational forces conducted a transition of military responsibility to the United Nations. The report describes these issues along with others developed through follow-on analyses of data and observations. It catalogs the team's important findings, places those findings in context, and outlines the nature of the actions needed to address shortcomings. This product is classified.

OPERATION IRAQI FREEDOM PRODUCTS

A Comprehensive Approach: Iraq Case Study (CAI) (2008)

This study was tasked by GEN Odierno (MNF-I/CG) and Ambassador Crocker (Iraq) to analyze the comprehensive political and military approach used to increase stability in Iraq and provide recommendations for policy and DOTMLPF changes. Specifically, this study focuses on four main themes: unifying efforts; attacking insurgent networks; separating the population from the insurgents; and building Government of Iraq capabilities. It will include a jointly written JCOA-DoS monograph focused on the civil-military cooperation aspects to the overall approach. The study initiated in December 2008 and will continue into 2009. This study will have both classified and unclassified products.

Joint Tactical Environment (JTE) (2008)

The JTE study originated from a request by MNF-I to JFCOM to document the innovation in Iraq between air-weapons teams and UAVs during operations in Sadr City. That task expanded to include other urban areas in Iraq and the critical command and control and airspace operations in those urban environments. Ultimately, the JTE mission documented innovation and best practices involving the integration of joint capabilities in urban operations. Specifically, the study was tasked to address four main pillars: C2, Fires, ISR, and Airspace from the joint perspective in an effort to better understand how units in environments such as Sadr City, Basrah, Mosul, and others, employed joint or non-organic capabilities for their specific operational environment. This product is classified.

Counterinsurgency Targeting and Intelligence, Surveillance, and Reconnaissance (CTI) (2008)

MNF-I requested this study to capture, document, and validate ISR best practices and lessons learned to improve ISR employment in support of COIN targeting in Iraq. JCOA collected data from almost all brigades, some battalions, and selected companies, in addition to higher echelon headquarters. Team members observed operations, conducted interviews, and collected data to document best practices important to success or failure in COIN targeting. While conducting this study it became clear that ISR support to COIN targeting had to be understood in relation to ISR support to the broader spectrum of COIN missions. This product is classified.

Operation Iraqi Freedom Counterinsurgency (COIN) Operations (2007)

The COIN study examines the shift in focus from reconstruction operations in 2003 to COIN operations (supported by a "surge" of US troops) in 2007. It focuses on the following areas: 1) evolution of US coalition strategy in Iraq, 2) elements of the latest strategy, and 3) impact of implementation of the latest strategy. This product is available in classified and unclassified versions.

A Team Approach: TF-Freedom, Mosul Iraq (2007)

This is the story of Task Force Freedom and how teamwork between those conducting operations and those providing intelligence led to success. Task Force Freedom adapted to a severely degraded security situation by developing a streamlined targeting cycle, lowering the threshold of actionable intelligence, and enabling distributed execution –underpinned by shared awareness and purpose. This product is classified.

Emerging Solutions: Al Anbar Best Practice Study (2007)

This study examines how Al Anbar changed dramatically between autumn 2006 and spring 2007, from one of the most violent, anti-coalition insurgent strongholds to one where local tribal leaders partnered with coalition forces in an effort to defeat Al Qaeda in Iraq. Violence dropped significantly. Reconstruction projects are underway, the economy is resurging, and normalcy is returning. This product is classified.

Transition to Sovereignty, (2007)

This study examines OIF from June 2004 to December 2005. This period began when the Coalition Provisional Authority (CPA) transferred sovereignty to the newly elected Iraq government. During this period the insurgency gained momentum, as it became apparent that the capabilities of other elements of USG could not be brought to bear on the situation because of the deteriorating security situation. This product is classified.

Stabilization, Security, Transition, and Reconstruction in a Counterinsurgency (SSTR) [Combined] (2006)

The Joint Staff and JCOA collected lessons during OIF. Each evaluated SSTR operations from the end of JCCO in May 2003 until the transition to Iraqi sovereignty on 28 June 2004. This publication combines the two efforts to allow the reader to review them in a single document, if desired. This product is classified.

UK and US Friendly Fire in Recent Combat Operations (2006)

The Technical Cooperation Programme - a cooperative venture between Australia, Canada, New Zealand, the United Kingdom, and the United States - Joint Systems and Analysis Group established Action Group 13 on Fratricide Mitigation with an objective, among others, of collaborative sharing of records, analyses and findings on friendly fire and fratricide. This report presents the results of an event-by-event collaborative comparison of friendly fire records between the UK and the US, covering three recent Coalition warfighting operations: Operation Desert Storm/Granby, Operation Enduring Freedom/Herrick, and Operation Iraqi Freedom/Telic. This product is unclassified.

Operation Iraqi Freedom (OIF) Communications Architecture and Bandwidth Analyses (2005)

The study characterizes the OIF communications architecture and bandwidth used by USCENTCOM in theatre, including: joint command centers; service component operational and tactical centers; and the last tactical mile, including global reach back. The study covered Joint Combined Combat Operations. It expresses bandwidths in terms of allocated data rate equivalent capacity and performance based on actual usage derived from historical logs. This product is classified.

Lessons-Learned on Modern Irregular Warfare- (2005)

This study provides an executive-level lessons learned overview of modern irregular warfare operations. It focuses on the nature of insurgencies and countering insurgencies, while recognizing that terrorism and intimidation are popular tools for insurgents. This product is unclassified.

JCOA – Joint Health Service Operations - Medical Lessons Learned (2005)

The DOD medical community has had great success in the treatment of combat casualties in Iraq. Combat mortality, defined as a measurement of the percentage of all battle casualties that result in death (Killed in Action + Died of Wounds/Total Battle Casualties), is the lowest level in recorded warfare. Despite the success in the reduction of combat mortality among coalition combat casualties, DOD medical treatment facilities still face many difficult challenges. These medical support challenges are examined in the JCOA medical study. The product is classified.

Synchronizing Counter-IED Efforts in Iraq (2005)

This study examines the challenges of synchronizing and coordination the activities of multiple entities working to counter adversaries' use of improvised explosive devices (IED). This product is classified.

Joint Combined Combat Operations (JCCO) (2004)

This study compiles operational insights gathered during major combat operations and assesses their impact on future joint warfighting at the operational level. It catalogs important findings, puts those findings in context, and outlines the nature of the actions needed to address them. This product is classified.

OPERATION ENDURING FREEDOM (OEF) PRODUCTS

Combined Security Transition Command –Afghanistan (CSTC-A) Police Reform Challenges (2008)

This study identifies and documents challenges associated with CSTC-A's organizing, training and equipping of the ANP forces and capture lessons learned associated with transitioning security responsibilities from coalition forces to the Government of Afghanistan (GoA) during a counterinsurgency. Since April 2005, CSTC-A has been tasked to organize, train, and equip the Afghanistan National Police forces. CSTC-A's mission supports Security Sector Reform for Afghanistan, to counter internal and external threats and ultimately ensure the long term success of the Afghan government. This study is classified.

Provincial Reconstruction Teams (PRT) in Afghanistan: An Interagency Assessment (2006)

In October 2005 a team from the US Agency for International Development, the Department of State, and JCOA assessed PRT operations in Afghanistan as part of an effort to distill best practices. The goals of the assessment were to: 1) generate lessons to inform greater cooperation and coordination among various USG departments and agencies in conflict and post-conflict settings, 2) determine key lessons to inform the transition of PRTs to ISAF, and 3) analyze the PRT concept and various implementation approaches to determine their applicability to other current and future US peace and stability operations. This product is unclassified – FOUO.

JALLC Provincial Reconstruction Team (PRT) Re-flagging: Lessons Learned from Stage 2 Expansion (2006)

The NATO Joint Analysis Lessons Learned Centre (JALLC) was tasked to: 1) Analyze the relief-in-place of a US PRT – either under NATO control or just prior to NATO assuming the control of the PRT – to another NATO or Non-NATO relieving nation, and 2) Use the PRT located in Herat, Afghanistan as the case study to identify lessons to improve the relief-in place process. This product is classified.

IRAQI PERSPECTIVE PROJECT PRODUCTS

The Iraqi Perspectives Project (IPP) was a Secretary of Defense directed research project, sponsored by JCOA, and conducted by the Institute for Defense Analysis (IDA) and Joint Advanced Warfighting Program (JAWP). This project examined the perspective of the former Iraqi regime's civilian and military leadership on issues of interest to the US military, using information gathered through interviews and reviews of captured documents. The goal of this project was to determine how US operations were viewed and understood by the enemy. The following products emerged from this project:

Mother of All Battles (MOAB) Saddam Hussein's Strategic Plan for the Persian Gulf War (2008)

Events in this report on the 'Mother of All Battles,' as Saddam designated the 1991 war, are drawn from primary Iraqi sources, including government documents, videos, audiotapes, maps, and photographs captured by U.S. forces in 2003 from the regime's archives and never intended for outsiders eyes. The report is part of a JCOA research project to examine contemporary warfare from the point of view of the adversary's archives and senior leader interviews. Its purpose is to stimulate thoughtful analyses of currently accepted lessons of the first Gulf War. While not a comprehensive history, this balanced Iraqi perspective of events between 1990 and 1991 takes full advantage of unique access to material. This product is unclassified.

Iraqi Perspectives Project Book (2007)

This book presents a historical analysis of the forces and motivation that drove our opponent's decisions during Phase III (Mar03-May03) of OPERATION IRAQI FREEDOM. Through dozens of interviews with senior Iraqi military and political leaders, and by making extensive us of thousands of official Iraqi documents, it substantively examines Saddam Hussein's leadership and its effect on the Iraqi military decision-making process, revealing the inner workings of a closed regime from the insiders' points of view. This product is unclassified.

Saddam and the Tribes - Regime Adaptation to Internal Challenges (2007)

This study explores the complex relationship between Saddam's regime and the tribes that lived under it between 1979 and 2003. This product explores the dynamics between tribe and state in dictatorial societies, and the ways in which tribal leadership can impact success or failure of central governance. This product is unclassified – FOUO.

Saddam and Terrorism - Emerging Insights from Captured Iraqi Documents (2007)

This study uses captured former regime documents to examine the links and motivations behind Saddam Hussein's interactions with regional and global terrorism, including a variety of revolutionary, liberation, nationalist, and Islamic terrorist organizations. This product is classified.

Toward an Operational-Level Understanding of Operation Iraqi Freedom (2005)

This report is the classified report associated with the Iraqi Perspectives Project Book. In addition to providing the Iraqi view of combat operations from early preparation through the collapse of the regime during OPERATION IRAQI FREEDOM, it also presents the Iraqi understanding of our capabilities and their efforts to exploit that understanding. A classified briefing and audio narrative slide show version is also available for this product. This product is classified.

TERRORIST PERSPECTIVE PROJECT PRODUCTS

The Terrorist Perspective Project (TPP) examines the perspectives of the members of Al Qaeda, and other terrorist groups which share its theology and world view, on issues of interest to the United States military, using primary source information principally gathered through open source and captured enemy documents. The goal of the project was to better "know the enemy" and to develop insights into enemy weaknesses and potential "Blue" strategies.

The Call to Global Islamic Jihad - The Jihad Manifesto (2008)

US intelligence has identified Abu Musab Al-Suri as the most important theorist of the global Islamic jihad, and considers his manifesto to be the definitive strategic document produced by al Qaida or any jihadi organization in more than a decade. But to Americans, his 1600-page manuscript largely consists of incomprehensible, impenetrable Islamic scholarship. This publication is a distillation of Al-Suri's Call to Global Islamic Resistance. This product is unclassified.

The Terrorist Perspective Project: Strategic and Operational Views of al Qaida and Associated Movements (2008)

This book synthesizes the perspectives of Osama bin Laden and his fellow Salafi jihadists on how to wage war on their enemies. This product is unclassified.

The Canons of Jihad: A Terrorists' Perspective of Warfare and Defeating America (2008)

Noting that the best way to understand Salafi jihadists is to ignore statements they release to the West in favor of examining what they say to each other, this book provides a definitive collection of the writings that intellectually underpin the jihadi movement. This product is unclassified.

Strategic and Operational Perspectives of Al Qaeda and Associated Movements: Phase 1 (2007)

This project approaches Al Qaeda and Associated Movements (AQAM) as a movement rather than as a network, and tries to understand whether and in what ways its members think above the tactical level. Drawing on the enemy's own words both from open source materials and captured documents, it identifies seams and subjects of concern within the AQAM community. It explores the dichotomy between those members of AQAM who think instrumentally about their war and those who do not, and discuss topics such as the evolution of the enemy's political and military thought, enemy assessments of the United States, their comparative views of their media and our media, and their concerns about attracting people to the movement. This product is unclassified – FOUO.

Voices of the Enemy Quotations from Al-Qaeda and Associated Movements (AQAM) (2007)

AQAM have been living in a state of war for more than four decades. Salafi jihadist leaders have developed a powerful narrative of history that appeals to and mobilizes their membership, though this narrative is based on questionable historical interpretations and future assumptions. Their strategists have learned that they will need to have a sound strategy and leaders who will ensure that such strategy is followed. The IDA study team used the enemy's own words from more than 250,000 documents from open and classified sources, including documents captured during OEF and OIF, to illustrate the enemy message for the reader. This product is unclassified – FOUO.

Strategic and Operational Perspectives of Al Qaeda and Associated Movements Phase 2 (2007)

This study draws upon words of AQAM found in captured documents and open-source pronouncements to describe a revolutionary movement which does not think of itself as a network. Intellectual leaders of AQAM are very concerned about the status of this movement, believing that the uncoordinated actions of its members repel the very Muslims that they need to attract. They are also concerned that they are losing the war of ideas and are isolated in an overwhelming hostile media environment. In response, the movement's intellectual leadership engages in a vigorous process of analysis, self-criticism and adaptation. Unfortunately for them, their ability to implement their adaptive policies is imperfect. This product is classified.

IRREGULAR WARFARE PRODUCTS

Second Lebanon War: Applied Lessons Learned (2008)

In 2006 the world watched as Israel responded to the 12 July killing of three Israeli Defense Forces (IDF) soldiers and the kidnapping of two additional IDF soldiers by fighters of the Islamic Resistance, the military arm of Hizballah. Over the course of the next month, Israel struggled to use military force and diplomacy to achieve the goals set out by Prime Minister Olmert. When Israel did not achieve these goals through an aggressive air campaign and subsequent

ground invasion of southern Lebanon, many observers began to question Israel's military capabilities. As one officer stated, "Israel has defeated larger Arab armies repeatedly since its creation in 1948. The IDF enjoyed a reputation of invincibility among its Arab neighbors, until last year." What happened? Why? And what are the implications for future conflicts? Many institutions, government agencies, and military services have studied the 2nd Lebanon War. None, however, have reported all the major findings in one holistic account. Using those previous studies as primary data sources, this JCOA study seeks to identify, synthesize, and present the lessons learned about the hybrid threat that seemed to emerge in the 2nd Lebanon War. This study is classified.

Super-Empowered Threat (2008)

A follow-on to the JCOA Techno-Guerilla (TG) and National Response to Biological Contagion (NRBC), Super-Empowered Threat (SET) examines the development of modern terrorist groups and the changes in the asymmetric threat. Work in TG and NRBC demonstrated the exponential increase in the operational and destructive capabilities of small terrorist groups. The threat continues to evolve. Alliances between state sponsors, terrorists groups, organized crime, and trans-national gangs are expanding. Terrorists groups are becoming more sophisticated in their use of commercially available electronic and modern telecommunications networks. Their influence is spreading across the globe while our focus is on the Middle East. The study evaluates the emerging terrorist threat using a law enforcement model analyzing behavioral resolve, operational practicality, and technical feasibility. This product is unclassified – FOUO.

Techno-Guerrilla: The Changing Face of Asymmetric Warfare (2007)

This study explores the evolution of asymmetric warfare and terrorism. The Techno-Guerrilla is an asymmetric force with conventional techniques and capabilities that utilizes open source warfare ("Wiki Warfare") and systems disruption, as it seeks to create a transnational insurgency. The study examines the phenomenon of super-empowerment – which is defined as the point at which a small group of individuals can create social-network disruption to an entire society with global effect, aka the 9/11 Effect. This product is unclassified – FOUO.

Georgia-Russia Conflict (2008)

This study, tasked by the Joint Staff and conducted in coordination with EUCOM and several USG agencies, examines the summer 2008 Georgia-Russia conflict in terms of background, conduct of the conflict, and the resulting regional/strategic implications. The analysis highlights direct military action in conventional approaches that at the same time used irregular approaches which shaped this conflict for well over a decade. The study offers an opportunity to see the strengths and weaknesses of a re-emergent Russia, as well as the impact of the evolving nature of hybrid warfare with its impact on policy, plans, and preparations for future conflict. This product is classified.

OTHER PRODUCTS

9-11 Commission Report/Global War on Terrorism Brief - Compare and Contrast (2005)

This briefing compares the purposes, approaches, and results of the 9-11 Commission Report to JCOA observations. This product is classified.

Joint Lessons Learned: Kosovo LL Brief (2004)

This is a combined study by NATO JALLC and USJFCOM Joint Center for Lessons Learned on operations in Kosovo and surrounding regions. This product is classified.

NOTES

Joint Lessons Learned Points of Contact

Joint Center for Operational Analysis

http://www.jwfc.jfcom.mil/jcll/
http://www.jfcom.smil.mil/jcoa-ll

116 Lake View Parkway
Suffolk, VA 23435-2697

	user name	phone#
BG Anthony Crutchfield, Director	(anthony.crutchfield)	x7317
Col Allen Kimball, Engagement Div	(john.kimball)	x7339
Mr. Mike Barker	(hugh.barker)	x7270

DSN: 668 Comm: (757) 203 - XXXX
Internet: (username)@jfcom.mil
SIPRNET: (username)@hq.jfcom.smil.mil

Joint Staff, J7 JTD

7000 Joint Staff Pentagon RM 2C714
Washington, D.C. 20318-7000

	user name	DSN	phone #
LTC Rick Fenoli	(richard.fenoli)	227	697-3665
Mr. S. Ball (JLPPS)	(shelby.ball)	225	695-2263

Comm: (703) XXX - XXXX
Internet: (username)@js.pentagon.mil
SIPRNET: (username)@pentagon.js.smil.mil

FEMA

FCP 200-H
500 C St. SW
Washington, D.C. 20472

Office of National Preparedness

	user name	phone#
Mr. K. Iacobacci	(kevin.iacobacci)	x3293

Comm: (202) 646 - XXXX
Internet: (username)@fema.gov

CENTCOM

US Central Command
7115 South Boundary Blvd.
MacDill AFB, FL 33621 - 5101

	user name	phone#
Mr. L. Underwood	(underwlm)	x3384
Ms. M. Avery	(averyma)	x6301
Mr. Jerry Swartz (JLLS)	(swartzjc)	x3450

DSN: 651 Comm: (813) 827 - XXXX
Internet: (username)@centcom.mil
SIPRNET: (username)@centcom.smil.mil

Department of Homeland Security

Department of Homeland Security
DHS/S & T
Washington D.C., 20528

	user name	phone#
Mr. Bill Lyerly	(william.lyerly)	x8344

Internet: (username)@dhs.gov
Comm: (202) 205 - xxxx

PACOM

HQ US Pacific Command
ATTN: J723
Camp Smith, HI 96861

	user name	phone#
Mr. Thom Acton (JLLS)	(thomas.acton)	x7767

DSN 315-477 Comm: (808) 477 - XXXX
Internet: (username)@pacom.mil

TRANSCOM

US Transportation Command (TCJ3-TN)
508 Scott Drive
Scott AFB, IL 62225 - 5357

	user name	phone#
Mr. R. Netemeyer	(robert.netemeyer)	x1782
Mr. T. Behne (JLLS)	(todd.behne.ctr)	x1141

DSN: 779 Comm: (618) 229 - XXXX
Internet: (username@ustranscom.mil
SIPRNET: (username)@ustranscom.smil.mil

SOUTHCOM

US Southern Command
3511 NW 91st Avenue
Miami, FL 33172 - 1217

	user name	phone#
Joe Cormack (JLLS)	(cormackj)	x3380

DSN: 567 Comm: (305) 437 - XXXX
Internet: (username)@hq.southcom.mil

STRATCOM

US Strategic Command (J732)
901 SAC Blvd. Suite M133
Offutt AFB, NE 68113-6500

	user name	phone#
LCDR Mike Manisidor	(michael.manisidor)	x5098
Mr. Mike ProcellaFrye	(michael.procella)	x5156

DSN: 272 Comm: (402) 232 - XXXX FAX: 5045
Internet: (username)@stratcom.mil
SIPRNET: (username)@stratnets.stratcom.smil.mil

ALSA CENTER

Air Land Sea Application Center
114 Andrews Street
Langley AFB, VA 23665

	user name	phone#
Director	(alsadirector)	x0902

DSN: 575 Comm: (757) 225 - XXXX
Internet: alsadirector@langley.af.mil
SIPRNET: (username)@langley.af.smil.mil

EUCOM

USEUCOM/ECJ37
Unit 30400
APO AE, 09131

	user name	phone#
Lt Col R. Haddock	(haddockr)	x4246
Ms. Kathleen Smith (JLLPS)	(smithkat)	x4247

DSN: (314) 430 - XXXX
Internet: (username)@eucom.mil
SIPRNET: (username)@eucom.smil.mil

SOCOM

SOKF-J7-DL
HQ Special Operations Command
7701 Tampa Point Blvd.
Macdill AFB, FL 33621 - 5323

	user name	SIPRNET	phone#
Mr. J. Kiser	(kiserj)	(john.kiser)	x9322
Mr. M. Hallal	(hallalm)	(marc.hallal)	x4787
Mr. B. Bailey	(baileyr)	(robert.bailey)	x9323

DSN: 299 COMM: (813) 828 - XXXX
Internet: (username)@socom.mil
SIPRNET: (username)@hqsocom.socom.smil.mil

NORAD

NORAD US Northern Command/J7
250 Vandenberg Street, Ste. B016
Peterson AFB, CO 80914

	user name	phone#
Mr. Don Fisk (JLLS)	(donald.fisk)	x9762

DSN: 692 COMM: (719) 474 - 8331
Internet:(username)@norad.mil
SIPRNET: (username)@northcom.smil.mil

NORTHCOM

NORAD US Northern Command/J7
250 Vandenberg Street, Ste. B016
Peterson AFB, CO 80914

	user name	phone#
Mr. Ken Jorgensen (JLLS)	(kenneth.jorgensen)	x3656

DSN: 834 Comm: (719) 556 - XXXX
Internet: (username)@northcom.mil
SIPRNET: (username)@northcom.smil.mil

Joint Information Operations Warfare Command

(J72 JLLP-IO)
2 Hall Blvd STE 217
San Antonio, TX 78243-7008

	user	namephone
Ms Regina Walker (Director)	(regina.walker)	x11
LTC Alan Welch	(alan.welch)	x31
Mr. James Bowden	(james.bowden)	x32
Mr. Greg Gibbons	(gregory.gibbons)	x33

DSN: 969-6293 Comm: (210)-670-2676 Ext. xx Fax: x4233
Internet: (username@jiowc.osis.gov)
SIPRNet: (username@jiowc.smil.mil)

US Marine Corps
http:/www.mccll.usmc.mil
http:/www.mccll.usmc.smil.mil

Marine Corp Center for Lessons Learned (MCCLL)
1019 Elliot Rd.

Quantico, VA 22134

	user name	phone#
Col Monte Dunard (Director)	(monte.dunard)	x1286
LtCol Scott Hawkins (OPSO)	(donald.hawkins)	x1282
Mr. Mark Satterly (JLLPS)	(mark.satterly)	x1316

DSN: 378 Comm: (703) 432-XXXX FAX: 1287
Internet: (username)@usmc.mil
SIPRNET: (username)@mccdc.usmc.smil.mil

US Navy
http://www.nwdc.navy.smil.mil/nlls

1530 Gilbert Street Ste 2128
Norfolk, VA 23511-2733

	user name	phone#
Mr. Mark Henning	(mark.henning)	*444-8010
Mr. David Perretta	(david.perretta.ctr)	x2921
Mr. Steve Poniatowski (JLLS)	(steve.poniatowski1)	x2918

DSN: *564 / 262 COMM: (757) 322- XXXX
Internet: (username)@nwdc.navy.mil
SIPRNET: (username)@nwdc.navy.smil.mil

US Air Force

HQ USAF/A9L
Office of Air Force Lessons Learned
1777 N Kent St, Floor 6
Rosslyn, VA 22209-2110

	user name	phone#
Col Philip Smith (Dir)	(philip.smith)	x8877
Mr. Paul McVinney	(paul.mcvinney)	x8884
Ms. Becky Harper	(rebecca.harper.ctr)	x8927

DSN: 425 Comm:(703) 588-XXXX FAX: 696-8738
Internet: (username)@pentagon.af.mil
SIPRNET: (username)@af.pentagon.smil.mil

US Army

Center for Army Lessons Learned (CALL)
10 Meade Avenue Bldg. 50
Fort Leavenworth, KS 66027

	user name	phone#
COL Robert Forrester, Director	(robert.forrester)	x3035
Mr. Larry Hollars (JOIB)	(larry.hollars)	x9581

DSN: 552 Comm: (913) 684 - XXXX
Internet: (username)@us.army.mil

DTRA

Defense Threat Reduction Agency
1680 Texas St., SE
Kirtland AFB, NM 87117 - 5669

	user name	phone#
Ms. Linda Qassim	(linda.qassim)	x8673

DSN: 246 Comm: (505) 846 - 8734
Internet: (username)@abq.dtra.mil

US Coast Guard
http:/www.uscg.mil

Commandant (CG-535)
2100 2nd St. S.W., RM 3414
Washington, D.C. 20593-0001
Office of Contingency Exercises

	user name	phone#
CAPT Mike Mohn, Chief	(michael.a.mohn)	x2141
CDR Mark Ledbetter	(mark.a.ledbetter)	x2143

Comm: (202) 372-xxxx
Internet: (username)@comdt.uscg.mil

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DEPARTMENT OF DEFENSE

COMMANDER
USJFCOM JWFC CODE JCOA
116 LAKE VIEW PKWY
SUFFOLK VA 23435-2697

OFFICIAL BUSINESS